Weaver
CONSTRUCTION MANAGEMENT
3679 S Huron Street, Suite 404 Englewood, Colorado 80110
Phone: (303) 789-4111 FAX: (303) 789-4310

SUBMITTAL TRANSMITAL

March 30, 2012
Submittal No: 13121-001.B

PROJECT: **Harold Thompson Regional WRF**
Birdsall Rd.
Fountain, CO 80817
Job No. 2908

ENGINEER: **GMS, Inc.**
611 No. Weber St., #300
Colorado Springs, CO 80903
719-475-2935 Roger Sams

OWNER: **Lower Fountain Metropolitan Sewage Disposal District**
901 S. Santa Fe Ave.
Fountain, CO 80817
719-382-5303 James Heckman

CONTRACTOR: **Heath Steel**
141 Racquette Dr
Fort Collins, CO 80522
970-490-8031 Randy Gates
rgates@heathsteel.com

SUBJECT: 2nd Revision for Equipment & Maintenance Prefabricated Metal Building by Chief Building

SPEC SECTION: 13121

PREVIOUS SUBMISSION DATES:

DEVIATIONS FROM SPEC: ___ YES _X_ NO

CONTRACTOR'S STAMP: This submittal has been reviewed by WCM and approved with respect to the means, methods, techniques, & safety precautions & programs incidental thereto. Weaver General Construction also warrants that this submittal complies with contracted documents and comprises on deviations thereto:

Contractor's Stamp:	Engineer's Stamp:
Date: 3/30/12 Reviewed by: John Jacob ( ) Reviewed Without Comments (X) Reviewed With Comments ENGINEER'S COMMENTS:_____	

Project: HDTWRF Project

Location: Fountain, CO

Supplier: Heath Steel

Date: 3/29/12

Submittal 13121-001.B. Equipment & Maintenance Metal Building by Chief Building.

Additional Submittal Review Comments:

1. **A revised anchor bolt pattern and column layout is provided in Heath's revised submittals per WCM as-builds. Refer to marked up Sheets A1 and A2 labeled "WCM As-built comments to Heath". These changes have been reflected on Heath's Sheets A1 and A2.**
2. **Refer to the attached email correspondences between WCM, GMS and Heath and Hilti product data for the base plate labeled "T". It has been Hilti's recommendation to use a 1" diameter HAS Hilti HY150. Based on this information MGA Structural Engineer's requested an embedment depth of 6-inches with the "T" base plate and a minimum of 6-inch to the edge of concrete slab or 14-inches form outside face of concrete foundation.**
3. **We request an expedited review by 4/2/12.**

John Jacob

From: Dave Frisch <drfrisch@gmsengr.com>
Sent: Thursday, March 08, 2012 4:28 PM
To: John Jacob
Subject: EM Building HDTRWRF

John

For your information

dave

David R. Frisch, PLS
GMS, Inc., Consulting Engineers
phone: 719-475-2935
fax: 719-475-2938
cell: 719-640-9692

Dave,
I have looked at the loads for the Anchor Bolt T layout (6.0^{k}T & 5.4^{k}V) and the proposed 1" diameter Hilti HAS in Hilti HY150. The centerline of the base plate must be 6" to the edge of slab not 3", or 14" from outside face of foundation. With the 6" edge distance the 1" diameter H.A.S. embedded 6" are adequate for the applied loads. Normally I would want much deeper embedment, however the load adjustments (reductions) increase dramatically with deeper embedment.

I consider this a secondary member and that is why the post installed anchor is acceptable. This work must be continuously special inspected.

Did Chief move their building to fit the other anchor bolts already installed?

Mike Gaines, P.E.

MGA Structural Engineers, Inc.
115 South Weber Street, Suite 101
Colorado Springs, CO 80903
Ph (719) 635-4473 Fax (719) 635-4795
mg@mgase.com

John Jacob

From: Randy Gates <rgates@heathsteel.com>
Sent: Tuesday, March 06, 2012 3:16 PM
To: Dave Frisch
Cc: John Jacob; rjsams@gmsengr.com
Subject: Re: EM Building - Anchor T

Dave,

Looking at Detail T on A2/A4, the 11" dimension can be increased as required, within reason to accommodate your minimum edge distance requirements. Keep in mind that the floor anchor will be moving into your finished space by this amount and may encroach on being a tripping hazard. A build-out in the wall of some sort to absorb this into the wall if that is a concern.

Thanks,

Randy Gates
Sales and Service

970-490-8031 Direct
970-490-8081 Fax
rgates@heathsteel.com

HeathSteel
P.O. Box 473
141 Racquene Drive
Fort Collins, CO 80522
heathsteel.com

Authorized
Chief
Builder

On 3/6/2012 11:55 AM, Dave Frisch wrote:
John

Do we have any more information on this regarding type of anchor and size of anchor?

Randy please confirm John's statement below regarding the placement of the anchor plate for Plate "T". It is my understanding from Terry that the plate could be moved away from the wall, if necessary, but the anchor tie location to the column on Grid line 2 as shown on Sheet S1 of S2 must be at the location shown, i.e. 11" from the outside edge of wall.

dave

David R. Frisch, PLS
GMS, Inc., Consulting Engineers
phone: 719-475-2935
fax: 719-475-2938
cell: 719-640-9692

At 10:42 AM 3/5/2012, John Jacob wrote:

Dave and Randy,

I'm hoping to have in my hands and yours by the end of the day, a letter from Hilti advising us what type on Hilti anchor should be used at the anchor location marked 'T'.

With this information I believe GMS structural engineer can tell us where the anchor can be placed from the outside edge of the slab. It is my understanding from Randy (correct me if I'm wrong) that Heath did not have a preference of the horizontal location of the 'T' anchor as long as it meets the minimum distance determined by GMS's struct. Engineer.

John Jacob
Project Manager
WEAVER Construction MANAGEMENT, INC.
PH: 303.789.4111 FAX: 303.789.4310
ADDRESS: 3679 S. Huron Street, Suite 404, Englewood, CO 80110 WEAVERCM.COM

John Jacob

From: John Jacob
Sent: Tuesday, March 06, 2012 1:47 PM
To: 'Dave Frisch'; rgates@heathsteel.com
Cc: rjsams@gmsengr.com; Tyler Ammerman; Jeff Burst
Subject: RE: EM Building - Anchor T
Attachments: 03062012 paEmAnchorHilti2.pdf

Importance: High

Dave,

Attached are calculations and a recommendation from Hilti for the 'T' anchor proposed on Chief's shop drawing A1. HY 150-Max Sd + HS B7 1-inch diameter with 6-inch embedment depth. We will need to know from GMS the distance that this anchor can be placed from the outside edge of the foundation.

I believe Randy will email his input regarding this distance as it related to his building only.

Thank you,
John

From: Dave Frisch [mailto:drfrisch@gmsengr.com]
Sent: Tuesday, March 06, 2012 11:55 AM
To: John Jacob; rgates@heathsteel.com
Cc: rjsams@gmsengr.com
Subject: Re: EM Building - Anchor T

John

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ADDRESS: 3679 S. Huron Street, Suite 404, Englewood, CO 80110 WEAVERCM.COM

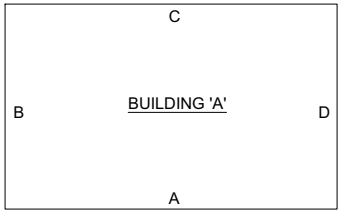
BUILDER: HEATH STEEL

CUSTOMER: WEAVER CONSTRUCTION MANAGEMENT

LOCATION: FOUNTAIN, CO

	WIDTH	LENGTH	SWA HEIGHT	FRONT ROOF PITCH	DOWNSPOUT DROPS-SWA	DOWNSPOUT DROPS-SWC
Bldg A :	51.04	67.94	19.33	3.000	0	0

TABLE OF CONTENTS



KEY PLAN

Roof Sheeting:

Type: Metal Sales Seam-Loc (Not By Chief)

Gage:

Color:

Wall Sheeting:

Type: Stucco Wall Panels (Not By Chief)

Gage:

Color:

Framing:

Purlin Type: Zees

Girt Type: Zees

Ordered Options:

Base Condition: Base C no trim

Base Trim Color: N/a

Wall Mastic: No

UL Rating: None

Thermal Blocks: N/a

Sidewall Eave Trim Type:

Eave & Gable Trim Color: N/a

Downspout Type: None

Downspout Color: N/a

Elbows at Bottom of Drops: N/a

Corner Trim Color: N/a

Framed Opening Trim Color: N/a

Light Transmitting Panels: 0

Girt Retainer Option for Purlins: N/a

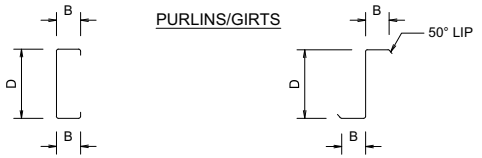
Framing Kits & Wall Openings
See Accessory Schedule on Anchor Rod Plan, Page A1.

Loading Information & Frame Column Reactions
See Load Notes and Reactions on Anchor Rod Detail Page, Page A5.

Wall Liner Panel:

Type: CS
Gage: 29
Color: White Polyester
Finish: Kynar

PURLINS/GIRTS



DESIGNATION	D	B
816	8.00	3.00
814	8.00	3.00
812	8.00	3.00
1014	10.00	3.50
1012	10.00	3.50

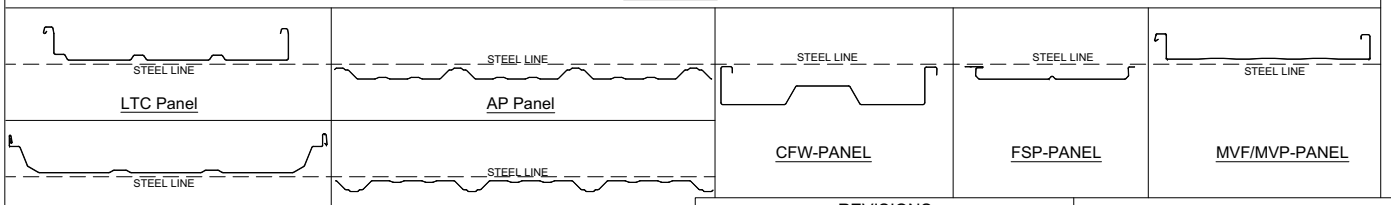
DESIGNATION	D	B
816	8.00	2.50
814	8.00	2.50
812	8.00	2.50
1014	10.00	2.75
1012	10.00	2.75

Drawing Designation:
a) Drawings stamped "PERMIT DRAWINGS" are drawings that are complete for the most part, however, since some details and part marks are missing, they are preliminary and are not to be used for construction and are not considered final drawings.
b) Drawings stamped "PROGRESS DRAWINGS" are drawings that are complete for the most part, however, since some details and part marks are missing, they are preliminary and are not to be used for construction and are not considered final drawings.
c) Drawings stamped "DOCUMENTS FOR APPROVAL" are preliminary drawings, used for approval with no part markings and are not to be used for construction.

GENERAL DETAIL MANUAL V _____

ROOF PANEL MANUAL V _____

SHEETING TYPES



ENGINEER REVIEW	
ENGINEER	DATE

REVISIONS

4 _____
3 _____
2 _____
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

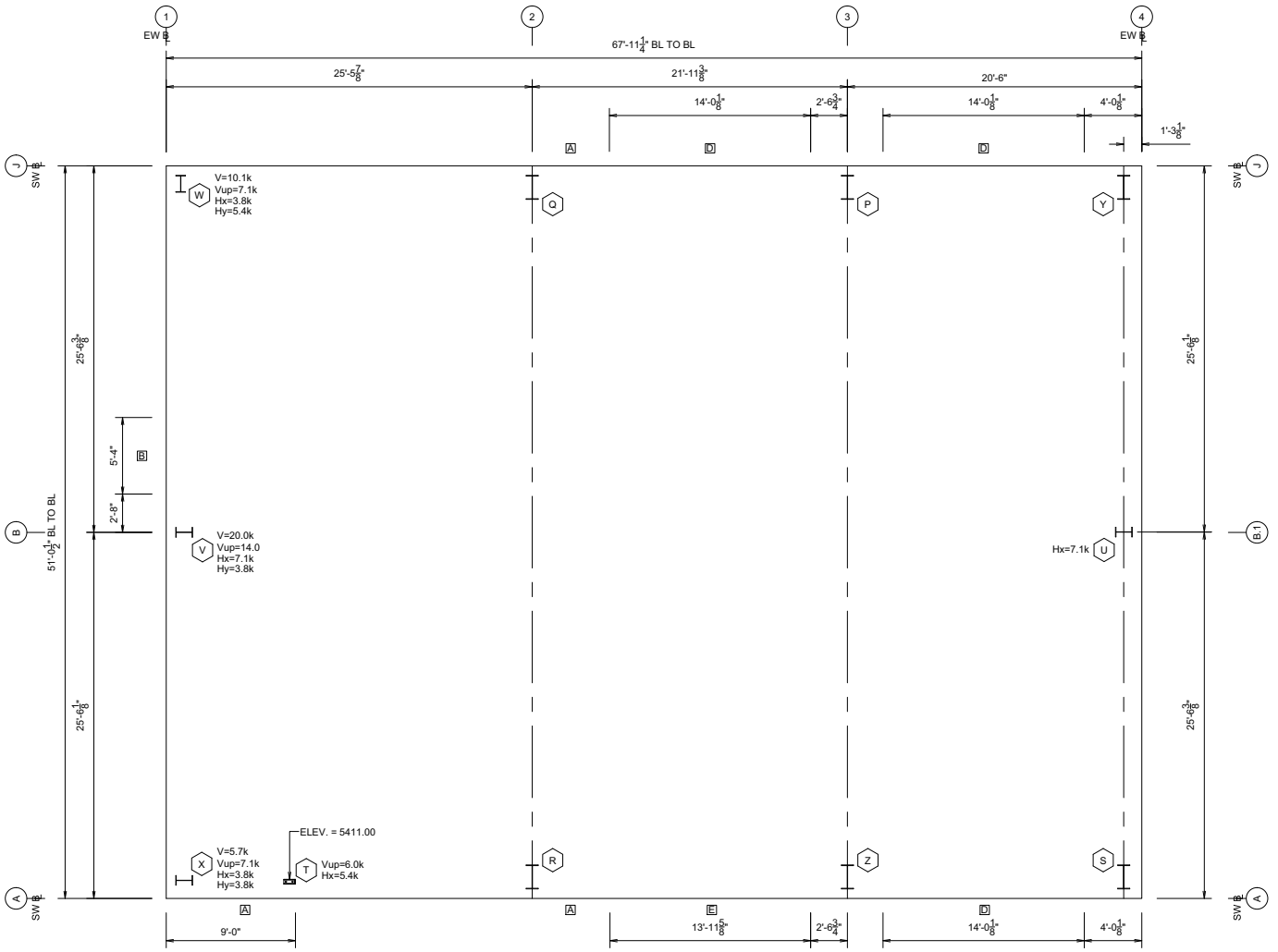
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

COVER PAGE
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	C1
BLO		B3004219	C1
26-MAR-12			

ACCESSORY SCHEDULE		
MARK	QUAN	DESCRIPTION
A	3	3'-4" X 7'-4" WALKDOOR F.O.
B	1	5'-4" X 8'-4" WALKDOOR F.O.
C	1	1'-0" X 1'-0" LOUVER F.O.
D	3	14'-0 1/8" X 14'-0" HI-LIFT DOOR F.O.
E	1	13'-11 5/8" X 14'-0" HI-LIFT DOOR F.O.



ANCHOR ROD PLAN

FINISHED FLOOR ELEVATION = 5411.00
BASE OF ALL COLUMNS AT ELEVATION = 5412.00
BASE OF FRAME OPENING JAMBS AT ELEVATION = 5412.00

REFERENCE NOTES:

1. ALL ANCHOR RODS INCLUDING NUTS AND WASHERS FOR SAME ARE NOT FURNISHED BY CHIEF BUILDINGS.
2. ANCHOR ROD MATERIAL SHALL CONFORM TO ASTM F1554 HAVING A YIELD OF 36 KSI OR GREATER.
3. ROD PROJECTIONS ARE RECOMMENDED MINIMUMS BASED ON THE BASE PLATE BEARING DIRECTLY ON THE CONCRETE PIER. IF THE BASE PLATE IS TO BEAR ON GROUT, THE ROD PROJECTION MUST BE INCREASED ACCORDINGLY.
4. CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.
5. ALL DRAWINGS ARE NOT TO SCALE.

ANCHOR RODS (BY OTHERS)		
QUAN	SIZE	PROJ
32	0-½" Ø	1½"
40	0-¾" Ø	2"
2	1" Ø	2"

REVISIONS

4
3
2
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

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ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
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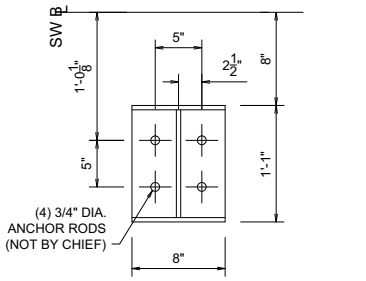
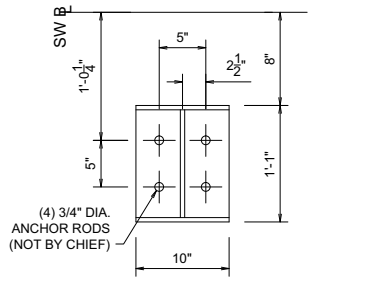
CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	A1
BLO	JSA	B3004219	A5
26-JAN-12	28-MAR-12		



DETAIL Z



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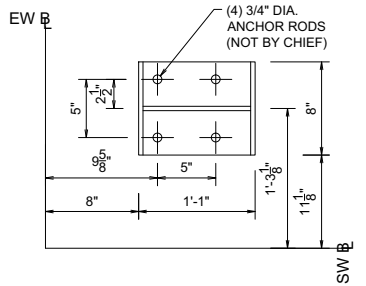
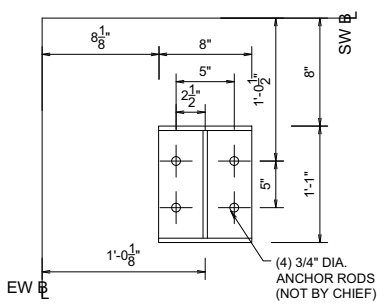


DETAIL X



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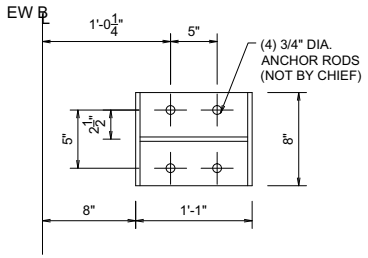

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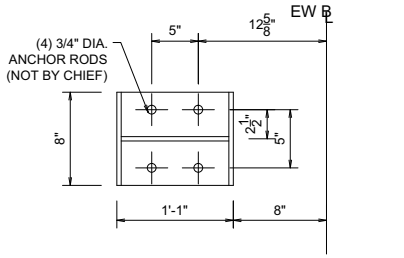

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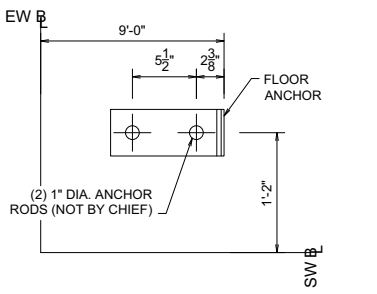

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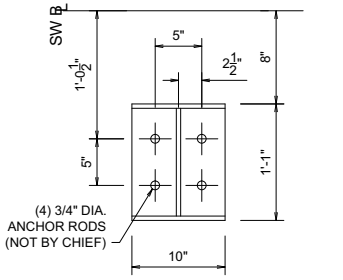

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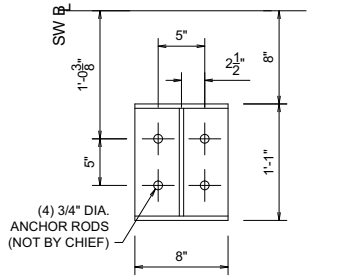

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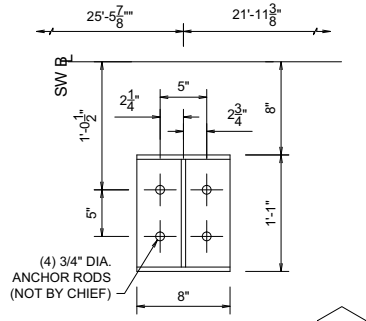

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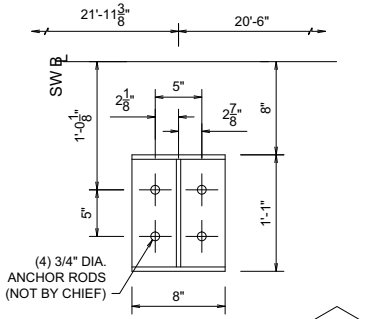

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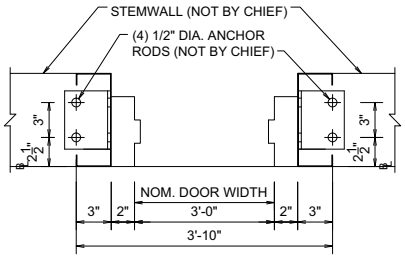
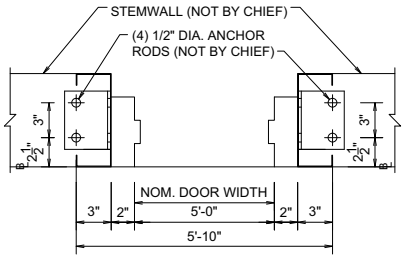


WALK DOOR ANCHOR ROD DETAIL



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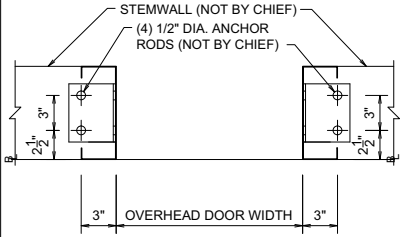


OVERHEAD DOOR
ANCHOR ROD DETAIL

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

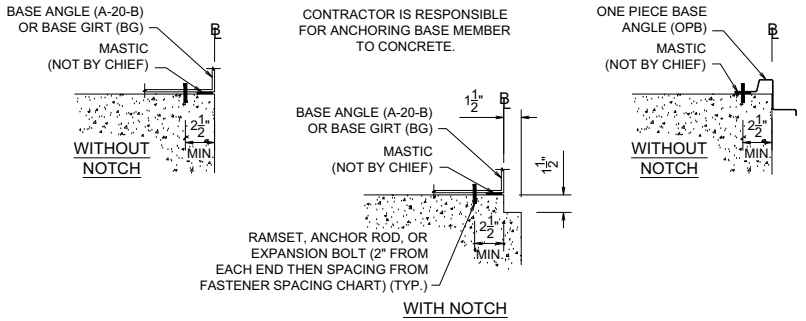
4.
3.
2.
1. REVISED PER CO#3 & 4 26-MAR-12

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	A2
BLO	JSA	B3004219	A5
26-JAN-12	28-MAR-12		



BASE MEMBER DETAILS

BASE ANCHORAGE SPACING FOR STANDARD BASE ANGLE, BASE GIRT OR ONE PIECE BASE WITH CS OR AP WALLS		
FASTENER TYPE & DIAMETER	MINIMUM EMBEDMENT	MAXIMUM SPACING
1/4" WEDGE ANCHOR ①	1 1/4"	3'-0"
1/4" SCREW TYPE ANCHOR ②	1 1/2"	3'-0"
3/8" CAST-IN ANCHOR	4" WITH HOOK OR HEAD	3'-0"
1/4" HAMMER-IN ③	1 3/8"	2'-0"
0.14" POWDER ACTUATED ④	1 1/4"	1'-6"

① HILTI KWIK BOLT®, RAMSET TRUBOLT®, POWERS POWERSTUD®, OR EQUAL
② CFS TAPCON®, HILTI KWIK-CON II®, POWERS WEDGE-BOLT®, OR EQUAL
③ POWERS ZAMAC HAMMER SCREW®, HILTI METAL HIT ANCHOR®, OR EQUAL
④ POWERS BALLISTIC POINT PIN, RAMSET 1500/1600 SERIES, HILTI UNIVERSAL NAIL OR EQUAL

FASTENER SPACING CHART

Sheeting
(Standing Seam Roof Panel Not by Chief Buildings)

The 24 ga Metal Sales Seam-Loc roof panels are not provided by Chief Buildings. Chief Buildings will supply secondary framing in the roof capable of resisting roll forces, sag loads and lateral buckling.

The anchorage of the 24 ga Metal Sales Seam-Loc roof panels in the corner zones of the roof will require the use of S-5! Clamps (not by Chief Buildings) to withstand the uplift loads present on the roof panels.

The roof panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Roof Live Load = 20 psf
Roof Snow Load = 38.17 psf
Roof Panel Suction (Interior Zone) = 25.4 psf
Roof Panel Suction (Edge Zone) = 44.22 psf
Roof Panel Suction (Corner Zone) = 65.39 psf
(Edge/Corner Zone Width = 5.1 ft.)

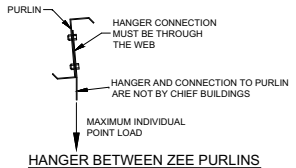
Note: See Figure 6-11C of ASCE 7-05 for location of edge and corner zones.

Chief Buildings neither assumes nor accepts any responsibility for the design of the roof panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the roof panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

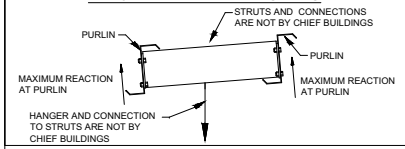
This structure has been designed for a collateral load of 3 psf. The total applied loads due to ceiling panels, ducts, sprinkler distribution lines, electrical equipment, conduit, fireproofing, other piping and mechanical loads, etc., cannot exceed this collateral load. In no case shall the total uniform collateral load on an individual roof member exceed the product of 3 psf times the spacing of the supporting member. Nor shall any individual point load or summation of point loads on any one roof member exceed the product of 3 psf times the member spacing times half the member length. In addition, no individual point load on a purlin can exceed 75 lbs. All loads suspended from purlins shall have the load introduced through the web and not the flange of the purlin. Hangers cannot be supported from the edge of flanges or through holes in the flanges of the purlins. Design of hangers and their attachments are not by Chief Buildings. Chief Buildings is NOT responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of hangers, bracing of suspended members, transverse support members, nor connections to roof purlins. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

HANGER AT INDIVIDUAL ZEE PURLIN



HANGER BETWEEN ZEE PURLINS



Building Design Criteria
B3004219

Building Code	Pikes Peak Regional Building Code 2011 Edition
2006 MBMA Occupancy Category	Substantial Hazard Occupancy Building
Roof Live Load	20 psf (Tributary Area Reduction Not Allowed)
Collateral Load	3 psf
Balanced Snow Loading (Pf)	30 psf
Unbalanced Loading and Drifts (Pg)	30 psf
Exposure Factor (Ce)	1.0
Thermal Factor (Ct)	1.0
Importance Factor (I)	1.1
Building Enclosure	Enclosed
Wind Speed	100 mph (GCpi ± 0.18)
Exposure Category	C
Importance Factor (I)	1.15
Wind Pressure (q)	23.52 psf
Seismic	
Spectral Response Short Periods (Ss)	18.5%
Spectral Response 1 s Period (S1)	5.9%
Seismic Importance Factor	1.25
Design Category	B
Site Class	D
Seismic Resisting System	
Longitudinal Direction	Steel System (R=3.0)
Lateral Direction	Steel System (R=3.0)
Seismic Response Coefficient (Cs)	0.082
Spectral Response Parameter Short Period (SDS)	0.197
Spectral Response Parameter 1 s Period (SD1)	0.094
Analysis Procedure	ELF
Base Shear	5,650 lbs.
Other Loads:	Two - 200 lb. Unit Heaters
	Ten - 524 lb. Cable Tray Point Loads
	Eight - 655 lb. Cable Tray Point Loads

Sheeting
(Wall Panel Not by Chief Buildings)

The 16" wide 20 ga. Stucco Wall Panel with sealant provided by Custom Panel Systems must provide structural support to all secondary framing. These panels must have a positive attachment to Chief Buildings' secondary framing capable of resisting roll forces, sag loads, lateral buckling, etc. in accordance with AISI specifications.

The wall panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Wall Panel Pressure (Interior Zone) = 27.8 psf
Wall Panel Suction (Interior Zone) = 30.1 psf
Wall Panel Suction (Corner Zone) = 37.2 psf
(Corner Zone Width = 5.1 ft.)

The wall panels must meet the minimum properties and connections given below, which will be considered adequate to provide support to the secondary framing.

Minimum Wall Panel Properties: Ixx = 0.0368 in4/ft Sxx = 0.0447 in^3/ft

Minimum Connection Requirements:
1) #12 structural fastener to secondary at 1'-4" o.c.

Chief Buildings neither assumes nor accepts any responsibility for the design of the wall panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the wall panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Roof Units
(Suspended RTU w/ Auxiliary Beams)

The 6 auxiliary support beams, main frame and endwall framing from Line #1 to Line #2 are designed to adequately support the following suspended cable tray loads:

(8) - 655 # Suspended Roof Units
(10) - 524 # Suspended Roof Units

The locations of the suspended cable trays are as shown on the roof framing plan. Each suspended load shall be equally and concentrically supported by the auxiliary support beams. Chief Buildings is **NOT** responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of the connections of the suspended cable tray units to the supporting beams and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

4 —
3 —
2 —
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
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DRAWN	CHECK	ORDER NO.	A3
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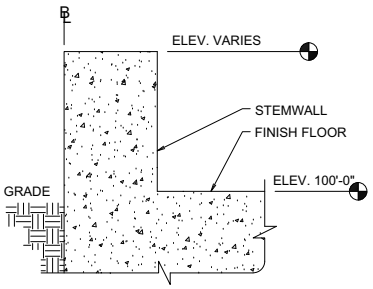


STEMWALL DETAIL

1. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR CONCRETE AND/OR MASONRY DESIGN, DIMENSIONS & REINFORCING STEEL DETAILS. CHIEF BUILDINGS RECOMMENDS THE CONTRACTOR/BUILDER TO OBTAIN THE SERVICES OF A QUALIFIED DESIGN ENGINEER FOR DESIGNS & DRAWINGS OF MASONRY OR CONCRETE WALL, FLOORS, & FOUNDATIONS TO WITHSTAND THE COLUMN REACTIONS INDICATED ON THE A.B. PLAN. CONCRETE OR MASONRY WALLS SHALL ALSO BE DESIGNED TO WITHSTAND WIND/SEISMIC LOAD ON THE WALL & BASE OF BLDG. WALL PANEL.

2. WHEN ENDWALL POST & CORNER POST REACTIONS ARE NOT INDICATED, THE CONTRACTOR/BUILDER &/OR CONCRETE DESIGN ENGINEER SHALL DETERMINE THE REACTIONS FROM THE SPECIFIED LIVE LOADS, WIND/SEISMIC LOAD, AND ANY APPLICABLE AUXILIARY LOADS.

3. CONCRETE AND/OR MASONRY ELEV. INDICATED ARE PER THE AGREEMENT TO PURCHASE/CUSTOMER DRAWINGS RECEIVED FROM THE CONTRACTOR/BUILDER.

STEEL MATERIAL PROPERTIES AND SPECIFICATIONS:

WELDED WF BEAMS/PLATE ¼" THICK: (ASTM A529, A572) (GR. 55)
WELDED WF BEAMS/PLATE > 1/8" & < ¼" THICK:
ASTM (A1011-SS, A1011-HSLAS, A572) (GR 55)
LIGHT GAGE (16, 14, 12 GA. BLACK): ASTM (A1011-SS, A1011-HLAS) (GR. 55)
ROUND ROD: (ASTM A36)
ROUND PIPE (BLACK): FY = 36 KSI (ASTM A53 GR. B, A500 GR. B)
SQUARE/RECTANGULAR TUBING: ASTM A500 (GR. B; GR. C)
HOT ROLLED WF BEAMS: ASTM A36; ASTM (A572, A992) (Gr. 50)
HOT ROLLED CHANNEL: ASTM A36; ASTM A572 (GR. 50)
BRACING CABLE: EXTRA HIGH STRENGTH (ASTM A475)
CS & LTC ROOF PANEL (26 & 24 GA. GALVALUME): ASTM A792 (GR. 80)
MSC & STC ROOF PANEL (24 & 22 GA. GALVALUME): ASTM A 792 (GR. 50)
CS & AP WALL PANEL (26 & 24 GA. GALVALUME): ASTM 792 (GR. 80)
MVP/MVP ROOF PANEL (24 & 22 GA. GALVALUME): ASTM A 792 (GR. 50)
CFW WALL PANEL (24 GA. GALVALUME): ASTM A 792 (GR. 50)

Future Expansion
Expandable Full Frame Endwall

The frame at line 4 is an expandable full load frame. The frame has been designed for a future expansion of 21'-3 1/8" centerline-to-centerline of the future frame.

Where the frame cross section requires flange braces both sides of the column or rafter, these flange braces must be installed upon future expansion.

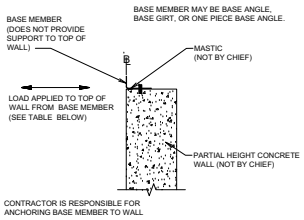
Exterior Concrete Wall
Partial Height, Exterior Concrete Wall, Base Member

The structure provided by Chief Buildings has been designed to have a 1' and 2' tall stem wall constructed of concrete, which is not by Chief Buildings. The base member at the top of the wall has **NOT** been designed to provide lateral support to the top of the wall. Chief Buildings neither assumes nor accepts any responsibility for design of this partial height concrete wall nor attachment or interface of this wall with the structure provided by Chief Buildings.

It is the responsibility of the Buyer/Contractor and/or End Owner to retain the services of a registered design professional who is responsible for the design of:

1.) The concrete wall and required reinforcing for code prescribed vertical and lateral loads (including the load imposed through the base member from the wall panel above) and sufficient ductility to allow for differential movement of the concrete wall and the structure provided by Chief Buildings.
2.) Attachment of the base member provided by Chief Buildings to the concrete wall.
3.) Detailing at base of the wall and at isolation joints at perpendicular walls to allow for differential movement of the concrete wall and the structure provided by Chief Buildings.

Lateral deflection and drift limits for the structure provided by Chief Buildings have been held to the limits ordered in the Agreement to Purchase. It is the responsibility of the registered design professional to insure design of the partial height concrete wall is compatible with these serviceability limits.



PARTIAL HEIGHT CONCRETE WALL DETAIL
BASE MEMBER ON TOP

Load Source	Load Applied to Top of Wall (in or out)
Wind Load (50-year recurrence)	100 plf

Attachments must be designed to safely transfer the forces shown from the base member into the top of the wall. The wall must be designed to resist loads applied to the wall area and the loads from the base member to the wall using load combinations and overstrength detailing requirements as required by the applicable building code.

Partition Wall
Transverse Partition Wall Not By Chief

The full height transverse partition wall not provided by Chief Buildings and its anchorage to the Chief Building must be designed and detailed to be compatible with the vertical and lateral deflections of the Chief Building and to withstand the loading prescribed by the applicable Building Code.

The deflections of the Chief Building at the full height partition wall at line 2 are as follows:

Snow/Live Load	1.0" downward
Wind Load	0.5" upward
Wind Load	0.6" lateral (parallel with partition)

Max. Vertical Down Deflection	1.4" downward
Max. Lateral Deflection	1.1" lateral (parallel with partition)

Wind load deflections are for 10-year recurrence level.

Chief Buildings neither assumes nor accepts any responsibility for the design of the transverse partition wall, its anchorage, and the local stresses that may occur on the structure provided by Chief Buildings due to the anchorage. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Roof Units
(Suspended RTU at Line #3)

The frame at Line #3 is designed to adequately support the following suspended roof units:

(2) - 200 # Suspended Roof Units

The locations of the suspended roof units are as shown on the roof framing plan. Each unit shall be concentrically supported by the frame rafter at Line #3. Chief Buildings is **NOT** responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of the connections of the suspended roof units to the supporting rafter and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

Mezzanine
(Mezzanine Not By Chief)

Mezzanine loading information:

The building provided by Chief Buildings does not include structural support for the mezzanine, which is furnished by others.

Chief Buildings neither assumes nor accepts any responsibility for the design of the mezzanine. The mezzanine must be designed to resist all vertical and lateral loads without relying on the building provided by Chief Buildings for any support. It is the responsibility of the Buyer/Contractor and/or End Owner to have the mezzanine design performed by a registered design professional.

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

4.
3.
2.
1. REVISED PER CO #3 & 4 26-MAR-12 BLO

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ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
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RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

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68802-3078

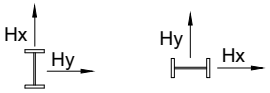
DRAWN	CHECK	ORDER NO.	A4
BLO	JSA	B3004219	A5
26-JAN-12	28-MAR-12		

1. COLUMN FOOTINGS AND PIERS MUST BE DESIGNED TO WITHSTAND HORIZONTAL AND VERTICAL REACTIONS AS SHOWN ON THE ANCHOR ROD PLAN. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR DESIGN OF CONCRETE FOUNDATION. CHIEF BUILDINGS RECOMMENDS THAT THE SERVICES OF A QUALIFIED ENGINEER IS OBTAINED BY THE CONTRACTOR / BUILDER TO DESIGN THE FOUNDATIONS FOR THE INDICATED REACTIONS.

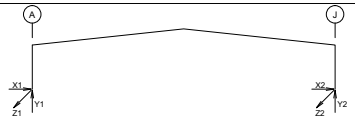
2. REACTIONS ARE GIVEN IN KIPS. (1 KIP = 1000 LBS.) MOMENTS, IF ANY, ARE GIVEN IN KIP-FT.

3. ANCHOR ROD DESIGN IS BASED ON SHEAR, TENSION, AND COMBINED TENSION AND SHEAR. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR ANCHOR ROD SIZE RECOMMENDATIONS WHEN ANCHOR ROD CONFIGURATION PLACES THE RODS IN A BENDING MODE. WHEN THE COLUMN BASE PLATE BEARS ON GROUT, THE CONTRACTOR / BUILDER OR FOUNDATION ENGINEER SHALL INVESTIGATE BENDING IN THE ANCHOR RODS AND PROVIDE A SHEAR KEY FOR THE COLUMN BASE TO THE PIER WHEN THE ANCHOR RODS ARE NOT ADEQUATE IN BENDING ABOUT THE PIER.

ORIENTATION OF
HORIZONTAL REACTIONS:

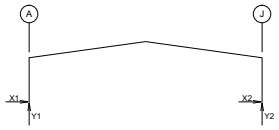


Hx IS PARALLEL TO THE COLUMN WEB AND
Hy IS PERPENDICULAR TO THE COLUMN WEB,
FOR ALL ENDWALL COLUMNS & SOLDIER COLUMNS
BY CHIEF BUILDINGS.



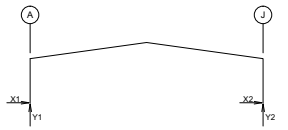
LOAD TYPE	X1	Y1	Z1	X2	Y2	Z2
DL - DEAD LOAD	0.9	2.7	-	-0.9	2.7	-
COL- COLLATERAL	2.4	3.5	-	-2.4	9.8	-
LL - LIVE LOAD	4.7	11.8	-	-4.7	11.8	-
SL - SNOW LOAD	7.1	17.8	-	-7.1	17.8	-
WLL- WIND FROM LEFT	-7.6	-12.4	-	-0.3	-8.4	-
WLR- WIND FROM RIGHT	0.3	-8.4	-	7.6	-12.4	-
WL2- WIND LT CASE 2	-7.5	-7.4	-	-0.3	-3.4	-
WR2- WIND RT CASE 2	0.3	-3.4	-	7.5	-7.4	-
WLE- WIND ON ENDWALL	-1.5	-13.7	-	2.0	-12.6	-
WE2- EW WIND CASE 2	-2.0	-12.6	-	1.5	-13.8	-
SL4- SNOW LOAD	4.6	7.9	-	-4.6	13.6	-
SL3- SNOW LOAD	4.6	13.6	-	-4.6	7.9	-
SEI- SEISMIC LOAD	-0.7	-0.5	-	-0.7	0.5	-
SB1- SEISMIC BRACING	-	-1.8	±2.3	-	-1.8	±2.3
SB2- SEISMIC BRACING	0.1	1.7	-	-0.1	1.8	-
BR1- WIND BRACING 1	-	-4.0	±5.4	-	-4.0	±5.4
BR2- WIND BRACING 2	0.2	4.0	-	-0.2	4.0	-
MAXIMUM POSITIVE	10.6	24.2	±5.4	7.0	30.1	±5.4
MAXIMUM NEGATIVE	-7.1	-16.1	±5.4	-10.2	-16.2	±5.4

B3004219A01 REACTIONS USED AT LINE(S): 2



LOAD TYPE	X1	Y1	X2	Y2
DL - DEAD LOAD	1.0	3.0	-1.0	3.0
COL- COLLATERAL	0.6	1.6	-0.6	1.6
LL - LIVE LOAD	4.3	10.3	-4.3	10.3
SL - SNOW LOAD	6.5	15.5	-6.5	15.5
WLL- WIND FROM LEFT	-6.7	-10.8	-0.2	-7.3
WLR- WIND FROM RIGHT	0.2	-7.3	6.7	-10.8
WL2- WIND LT CASE 2	-6.6	-6.4	-0.2	-3.0
WR2- WIND RT CASE 2	0.2	-3.0	6.6	-6.4
WLE- WIND ON ENDWALL	-1.3	-12.0	1.8	-11.0
WE2- EW WIND CASE 2	-1.8	-11.0	1.3	-12.0
SL4- SNOW LOAD	4.2	6.9	-4.2	11.9
SL3- SNOW LOAD	4.2	11.9	-4.2	6.9
SEI- SEISMIC LOAD	-0.5	-0.4	-0.5	0.4
MAXIMUM POSITIVE	8.3	20.2	6.0	20.2
MAXIMUM NEGATIVE	-6.0	-10.2	-8.3	-10.2

B3004219A02 REACTIONS USED AT LINE(S): 4



LOAD TYPE	X1	Y1	X2	Y2
DL - DEAD LOAD	1.0	2.9	-1.0	2.9
COL- COLLATERAL	0.7	1.8	-0.7	1.8
LL - LIVE LOAD	4.2	10.5	-4.2	10.5
SL - SNOW LOAD	6.3	15.8	-6.3	15.8
WLL- WIND FROM LEFT	-6.6	-11.0	-0.3	-7.5
WLR- WIND FROM RIGHT	0.3	-7.5	6.6	-11.0
WL2- WIND LT CASE 2	-6.6	-6.6	-0.3	-3.0
WR2- WIND RT CASE 2	0.3	-3.0	6.6	-6.5
WLE- WIND ON ENDWALL	-1.2	-12.4	1.7	-11.2
WE2- EW WIND CASE 2	-1.7	-11.2	1.2	-12.4
SL4- SNOW LOAD	4.1	7.0	-4.1	12.1
SL3- SNOW LOAD	4.1	12.1	-4.1	7.0
SEI- SEISMIC LOAD	-0.5	-0.4	-0.5	0.4
MAXIMUM POSITIVE	8.1	20.5	6.1	20.5
MAXIMUM NEGATIVE	-6.1	-10.6	-8.1	-10.6

B3004219A03 REACTIONS USED AT LINE(S): 3

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

REVISIONS

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2 —

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ANCHOR ROD DRAWINGS

HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
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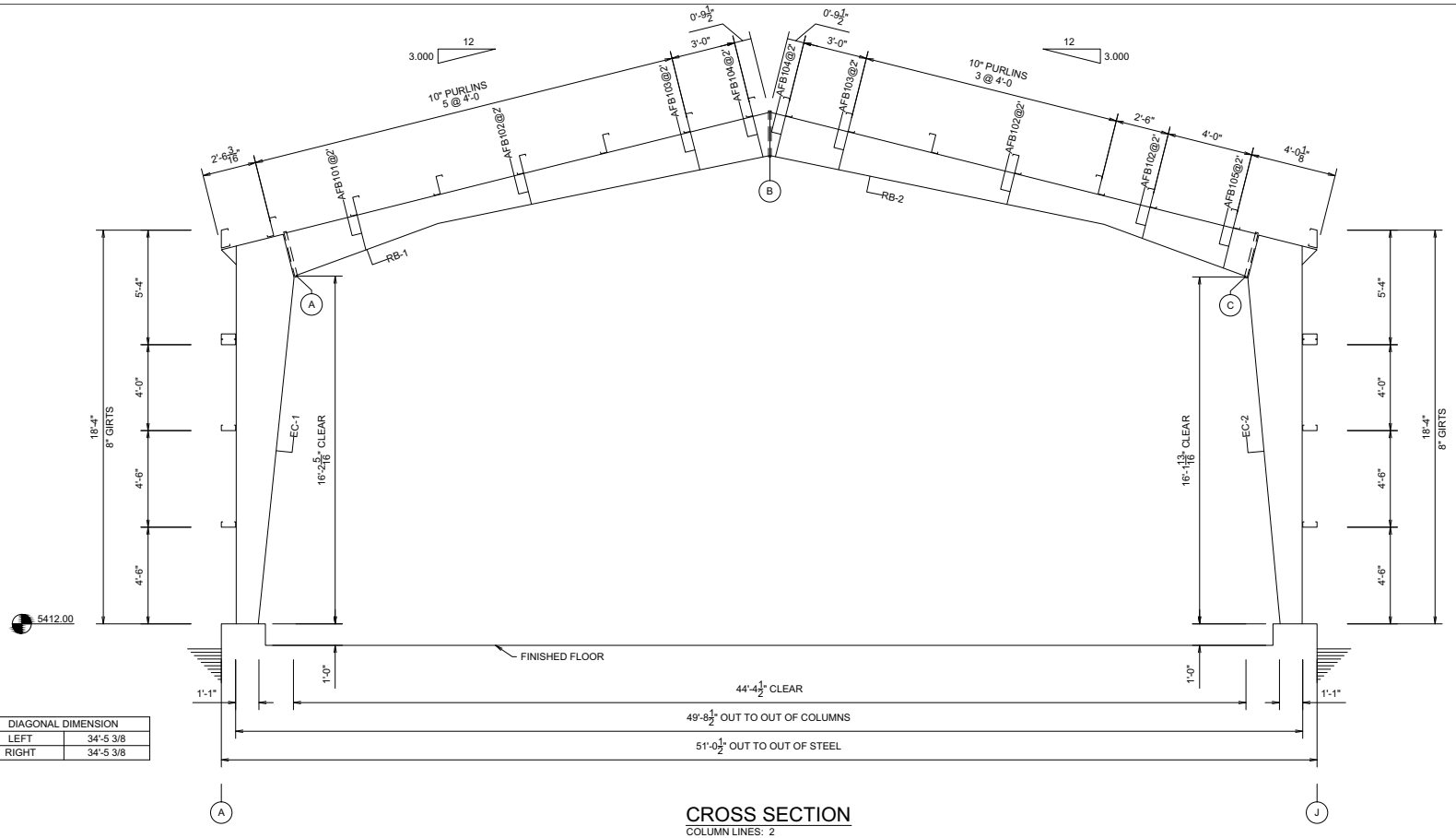
DRAWN	CHECK	ORDER NO.	A5
BLO	JSA	B3004219	A5
26-JAN-12	28-MAR-12		



DIAGONAL DIMENSION	
LEFT	34'-5 3/8
RIGHT	34'-5 3/8

CROSS SECTION

COLUMN LINES: 2

SPLICE BOLT TABLE			
SPLICE	NO	SIZE	DEPTH
A	10	5/8 X 2	2'-1
B	10	5/8 X 1 1/2	2'-0
C	10	5/8 X 2	2'-1

REFERENCE NOTES

1. BOLTING RECOMMENDATIONS---ALL HIGH STRENGTH BOLTS ARE A-325 WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE SNUG TIGHT METHOD SPECIFIED IN THE 'SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS', PUBLISHED BY RCSC, DATED JUNE 30,2004. SNUG TIGHT CONDITION IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRON WORKER USING AN ORDINARY SPUD WRENCH TO BRING THE PLIES INTO FIRM CONTACT.

2. BOLT SPECIFICATIONS -- ALL BOLTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325 BOLT SPECIFICATIONS SUBSTITUTION OF MILD STEEL BOLTS WILL NOT BE ALLOWED AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

   NUT SPECIFICATIONS -- NUTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH NUTS CONFORMING TO ASTM A194 GRADE 2 OR 2H, OR ASTM A563 GRADE C, D, OR DH NUT SPECIFICATIONS. SUBSTITUTION OF MILD STEEL NUTS WILL NOT BE ALLOWED, AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

3. ALL ELEVATION DIMENSIONS ARE TAKEN FROM BOTTOM OF FRAME COLUMN BASE PLATE. REFER TO ANCHOR ROD DRAWING FOR BASE OF COLUMN ELEVATION.

4. TEMPORARY BRACING SHALL BE INTRODUCED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS IMPOSED UPON THE STRUCTURE DURING THE ERECTION PROCESS.

5. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE MARKED.

6. ALL DRAWINGS ARE NOT TO SCALE.

7. NOTE : * REFER TO GENERAL DETAILS AND SECTIONS FOR ROOF SHEET OVERHANG AND SPLICE LAP DIMENSIONS.

8. FLANGE BRACES ARE REQUIRED ONLY ON ONE SIDE OF FRAME, EXCEPT THOSE FLANGE BRACES THAT ARE PRECEDED WITH A (2)FB OR (2)FF ARE REQUIRED ON BOTH SIDES OF THE FRAME.

9. EAVE HEIGHT DIMENSION IS NOT ALWAYS TO THE TOP OF THE EAVE STRUT. DUE TO THERMAL BLOCK SITUATIONS, EAVE HEIGHT DIMENSION AND TOP GIRT SPACE DIMENSION MAY BE TO THE INTERSECTION OF THE TOP OF THE PURLINS. REFER TO THE EAVE DETAILS FOR MORE INFORMATION.

10. ALL WELDS HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBF AT MINUS 20 DEGREES F.

FRAME:B3004219A01 21-MAR-2012 15:53:44.54

REVISIONS
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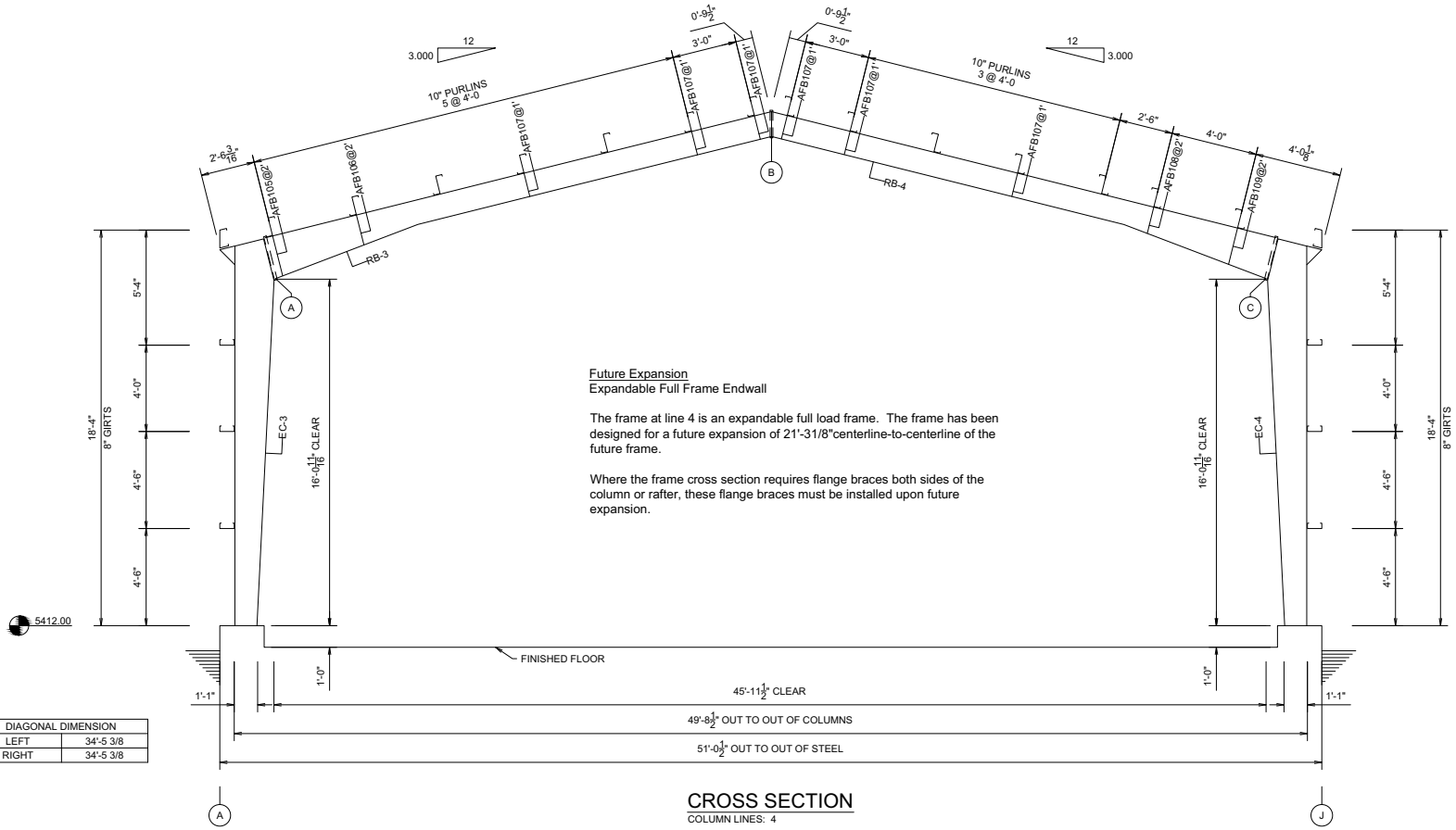
CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

CROSS SECTION
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

DRAWN	CHECK	ORDER NO.	CS1
BLO		B3004219	CS3
26-MAR-12			



Future Expansion
Expandable Full Frame Endwall

The frame at line 4 is an expandable full load frame. The frame has been designed for a future expansion of 21'-31/8"centerline-to-centerline of the future frame.

Where the frame cross section requires flange braces both sides of the column or rafter, these flange braces must be installed upon future expansion.

DIAGONAL DIMENSION	
LEFT	34'-5 3/8
RIGHT	34'-5 3/8

CROSS SECTION

COLUMN LINES: 4

SPLICE BOLT TABLE			
SPLICE	NO	SIZE	DEPTH
A	10	5/8 X 2	2'-0
B	8	5/8 X 1 1/2	1'-2
C	10	5/8 X 2	2'-0

REFERENCE NOTES

1. BOLTING RECOMMENDATIONS---ALL HIGH STRENGTH BOLTS ARE A-325 WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE SNUG TIGHT METHOD SPECIFIED IN THE 'SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS', PUBLISHED BY RCSC, DATED JUNE 30,2004. SNUG TIGHT CONDITION IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRON WORKER USING AN ORDINARY SPUD WRENCH TO BRING THE PLIES INTO FIRM CONTACT.

2. BOLT SPECIFICATIONS -- ALL BOLTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325 BOLT SPECIFICATIONS SUBSTITUTION OF MILD STEEL BOLTS WILL NOT BE ALLOWED AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

   NUT SPECIFICATIONS -- NUTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH NUTS CONFORMING TO ASTM A194 GRADE 2 OR 2H, OR ASTM A563 GRADE C, D, OR DH NUT SPECIFICATIONS. SUBSTITUTION OF MILD STEEL NUTS WILL NOT BE ALLOWED, AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

3. ALL ELEVATION DIMENSIONS ARE TAKEN FROM BOTTOM OF FRAME COLUMN BASE PLATE. REFER TO ANCHOR ROD DRAWING FOR BASE OF COLUMN ELEVATION.

4. TEMPORARY BRACING SHALL BE INTRODUCED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS IMPOSED UPON THE STRUCTURE DURING THE ERECTION PROCESS.

5. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE MARKED.

6. ALL DRAWINGS ARE NOT TO SCALE.

7. NOTE : * REFER TO GENERAL DETAILS AND SECTIONS FOR ROOF SHEET OVERHANG AND SPLICE LAP DIMENSIONS.

8. FLANGE BRACES ARE REQUIRED ONLY ON ONE SIDE OF FRAME, EXCEPT THOSE FLANGE BRACES THAT ARE PRECEDED WITH A (2)FB OR (2)FF ARE REQUIRED ON BOTH SIDES OF THE FRAME.

9. EAVE HEIGHT DIMENSION IS NOT ALWAYS TO THE TOP OF THE EAVE STRUT. DUE TO THERMAL BLOCK SITUATIONS, EAVE HEIGHT DIMENSION AND TOP GIRT SPACE DIMENSION MAY BE TO THE INTERSECTION OF THE TOP OF THE PURLINS. REFER TO THE EAVE DETAILS FOR MORE INFORMATION.

10. ALL WELDS HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBF AT MINUS 20 DEGREES F.

FRAME:B3004219A02 22-MAR-2012 10:17:43.68

REVISIONS
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3
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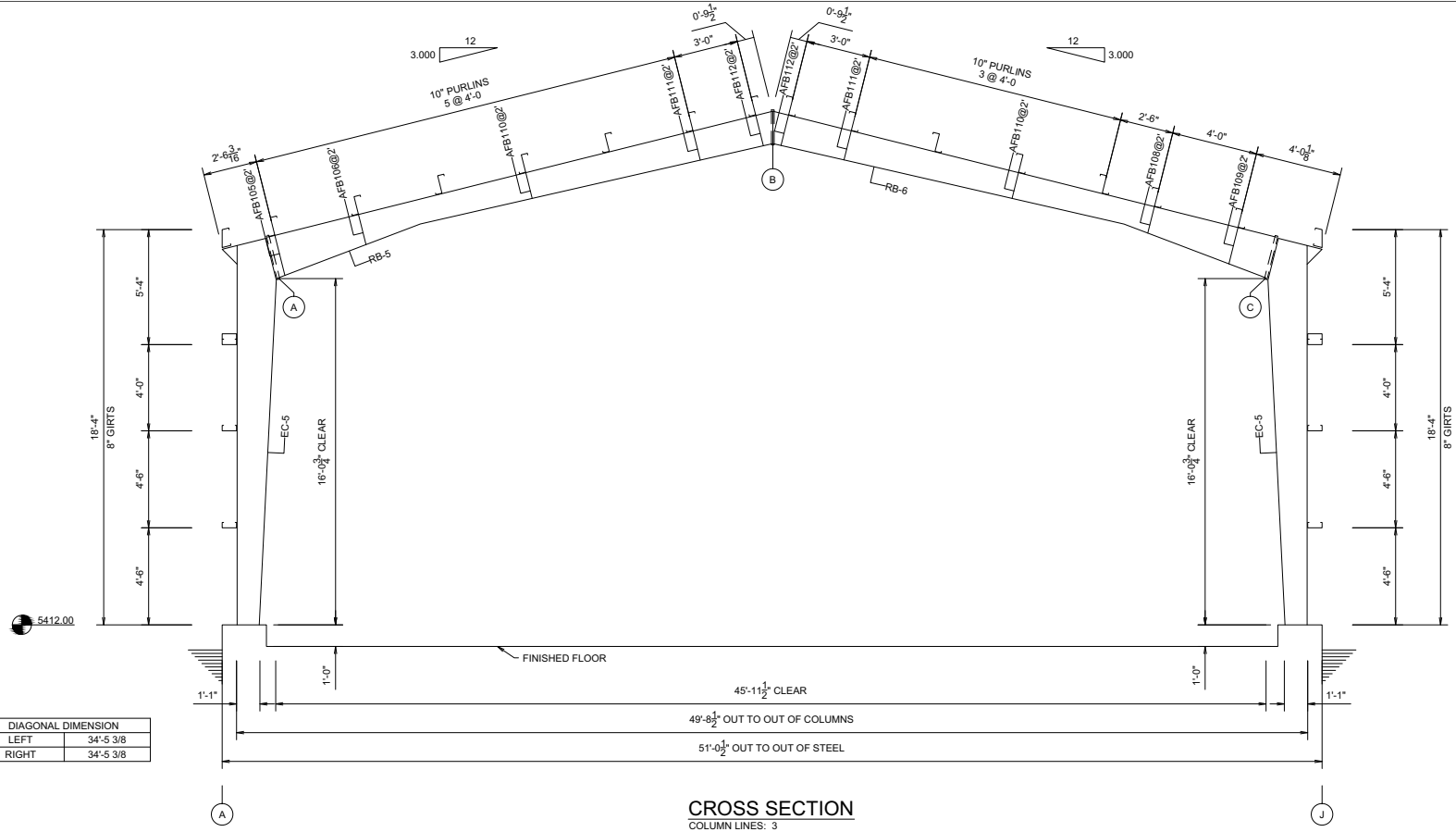
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

CROSS SECTION
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

DRAWN	CHECK	ORDER NO.	CS2 / CS3
BLO		B3004219	
26-MAR-12			



CROSS SECTION

COLUMN LINES: 3

DIAGONAL DIMENSION	
LEFT	34'-5 3/8
RIGHT	34'-5 3/8

SPLICE BOLT TABLE			
SPLICE	NO	SIZE	DEPTH
A	10	5/8 X 2	2'-0
B	8	5/8 X 1 1/2	1'-6
C	10	5/8 X 2	2'-0

REFERENCE NOTES

1. BOLTING RECOMMENDATIONS---ALL HIGH STRENGTH BOLTS ARE A-325 WITH HEAVY HEX NUTS AND ARE TO BE INSTALLED USING THE SNUG TIGHT METHOD SPECIFIED IN THE 'SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 BOLTS', PUBLISHED BY RCSC, DATED JUNE 30,2004. SNUG TIGHT CONDITION IS ATTAINED WITH A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRON WORKER USING AN ORDINARY SPUD WRENCH TO BRING THE PLIES INTO FIRM CONTACT.
2. BOLT SPECIFICATIONS -- ALL BOLTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH BOLTS CONFORMING TO ASTM A325 BOLT SPECIFICATIONS SUBSTITUTION OF MILD STEEL BOLTS WILL NOT BE ALLOWED AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.

   NUT SPECIFICATIONS -- NUTS SPECIFIED THROUGHOUT THESE DRAWINGS WILL BE HIGH STRENGTH NUTS CONFORMING TO ASTM A194 GRADE 2 OR 2H, OR ASTM A563 GRADE C, D, OR DH NUT SPECIFICATIONS. SUBSTITUTION OF MILD STEEL NUTS WILL NOT BE ALLOWED, AND ANY FIELD SUBSTITUTION WILL VOID THE DESIGN WARRANTY.
3. ALL ELEVATION DIMENSIONS ARE TAKEN FROM BOTTOM OF FRAME COLUMN BASE PLATE. REFER TO ANCHOR ROD DRAWING FOR BASE OF COLUMN ELEVATION.
4. TEMPORARY BRACING SHALL BE INTRODUCED WHEREVER NECESSARY TO TAKE CARE OF ALL LOADS IMPOSED UPON THE STRUCTURE DURING THE ERECTION PROCESS.
5. ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE MARKED.
6. ALL DRAWINGS ARE NOT TO SCALE.
7. NOTE : * REFER TO GENERAL DETAILS AND SECTIONS FOR ROOF SHEET OVERHANG AND SPLICE LAP DIMENSIONS.
8. FLANGE BRACES ARE REQUIRED ONLY ON ONE SIDE OF FRAME, EXCEPT THOSE FLANGE BRACES THAT ARE PRECEDED WITH A (2)FB OR (2)FF ARE REQUIRED ON BOTH SIDES OF THE FRAME.
9. EAVE HEIGHT DIMENSION IS NOT ALWAYS TO THE TOP OF THE EAVE STRUT. DUE TO THERMAL BLOCK SITUATIONS, EAVE HEIGHT DIMENSION AND TOP GIRT SPACE DIMENSION MAY BE TO THE INTERSECTION OF THE TOP OF THE PURLINS. REFER TO THE EAVE DETAILS FOR MORE INFORMATION.
10. ALL WELDS HAVE A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LBF AT MINUS 20 DEGREES F.

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REVISIONS
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NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

CROSS SECTION

HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

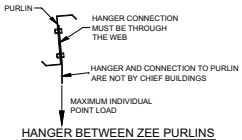
DRAWN	CHECK	ORDER NO.	CS3
BLO		B3004219	CS3
26-MAR-12			

Collateral Loads

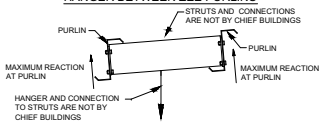
This structure has been designed for a collateral load of 3 psf. The total applied loads due to ceiling panels, ducts, sprinkler distribution lines, electrical equipment, conduit, fireproofing, other piping and mechanical loads, etc., cannot exceed this collateral load. In no case shall the total uniform collateral load on an individual roof member exceed the product of 3 psf times the spacing of the supporting member. Nor shall any individual point load or summation of point loads on any one roof member exceed the product of 3 psf times the member spacing times half the member length. In addition, no individual point load on a purlin can exceed 75 lbs. All loads suspended from purlins shall have the load introduced through the web and not the flange of the purlin. Hangers cannot be supported from the edge of flanges or through holes in the flanges of the purlins. Design of hangers and their attachments are not by Chief Buildings. Chief Buildings is NOT responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of hangers, bracing of suspended members, transverse support members, nor connections to roof purlins. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

HANGER AT INDIVIDUAL ZEE PURLIN



HANGER BETWEEN ZEE PURLINS



Roof Units
(Suspended RTU w/ Auxiliary Beams)

The 6 auxiliary support beams, main frame and endwall framing from Line #1 to Line #2 are designed to adequately support the following suspended cable tray loads:

◆ (8) - 655 # Suspended Roof Units

● (10) - 524 # Suspended Roof Units

The locations of the suspended cable trays are as shown on the roof framing plan. Each suspended load shall be equally and concentrically supported by the auxiliary support beams. Note that the roof panel must attach to the 3 auxiliary support beams that are replacing the roof purlins. Chief Buildings is NOT responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of the connections of the suspended cable tray units to the supporting beams and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

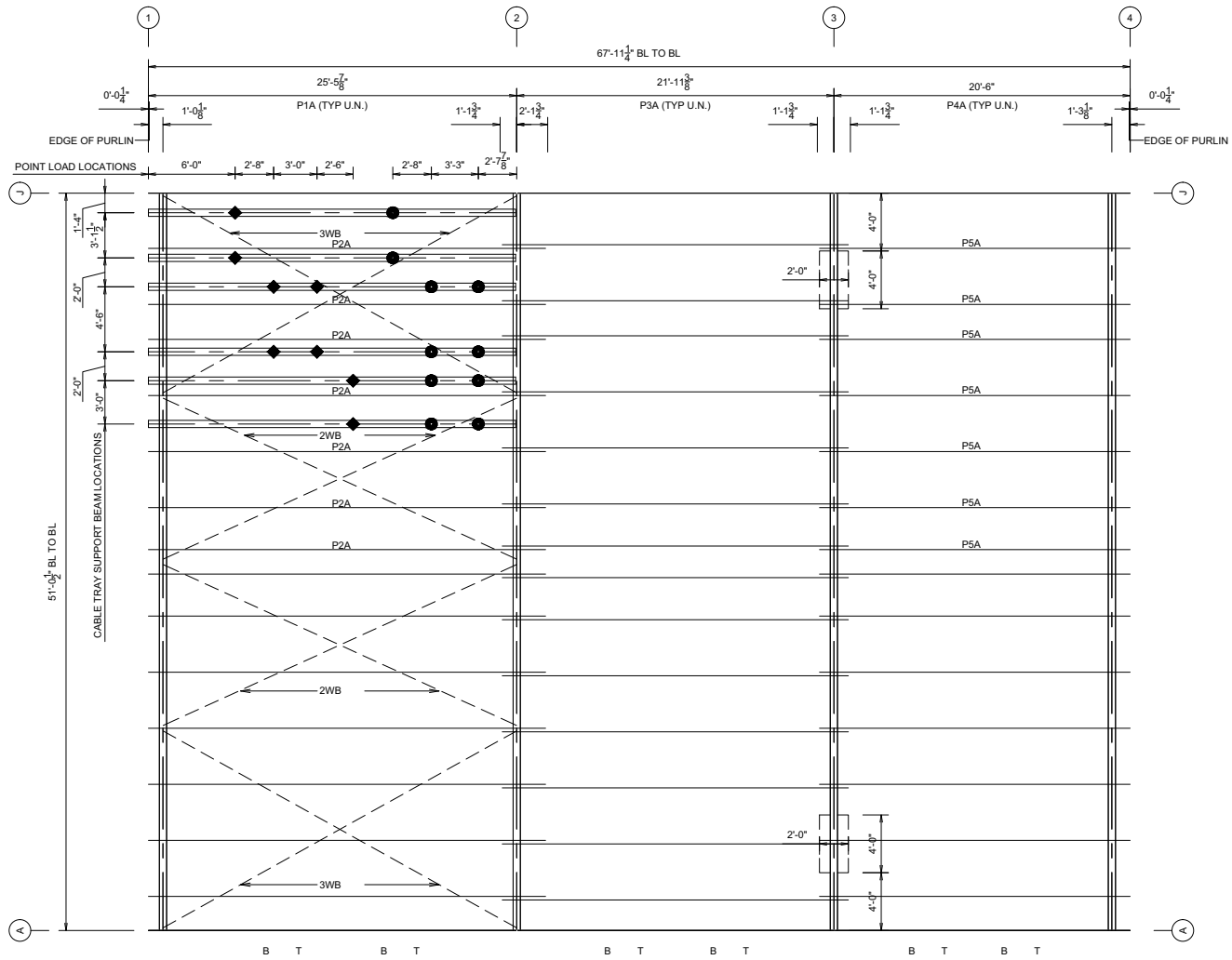
Roof Units
(Suspended RTU's at Line #3)

The frame at Line #3 is designed to adequately support the following suspended roof units:

(2) - 200 # Suspended Roof Units

The locations of the suspended roof units are as shown on the roof framing plan. Each unit shall be concentrically supported by the frame rafter at Line #3. Chief Buildings is **NOT** responsible for lateral or longitudinal bracing of suspended members subjected to horizontal service, seismic, or wind loading.

Chief Buildings neither assumes nor accepts any responsibility for the design of the connections of the suspended roof units to the supporting rafter and the local stresses caused by such connections nor the design of bracing suspended units for horizontal forces. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.



ROOF FRAMING PLAN

REFERENCE NOTES

1. ALL PURLINS ATTACH TO FRAMING USING "STD" ATTACHMENT UNLESS NOTED. REFER TO GD MANUAL SECTION 4 FOR BOLT LOCATIONS.
2. "T" = TOP SAG ANGLE. "B" = BOTTOM SAG ANGLE.

MATERIAL CALLOUTS:

2WB denotes 1/4" cable bracing
3WB denotes 3/8" cable bracing
All Eave Struts are 10" C-section, 12 gage mat'l.
Purlins in Bay 1 are 10" Z-section, 12 gage mat'l.
Purlins in Bays 2 & 3 are 10" Z-section, 14 gage mat'l.
Cable Tray Support Beams are built-up sections, w/8" x 1/4" flanges and 7 1/2" x 1/8" webs.

REVISIONS
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NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

ROOF FRAMING DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE 68802-3078

DRAWN	CHECK	ORDER NO.	RF1
BLO		B3004219	RF3
26-MAR-12			

Sheeting
(Standing Seam Roof Panel Not by Chief Buildings)

The 24 ga Metal Sales Seam-Loc roof panels are not provided by Chief Buildings. Chief Buildings will supply secondary framing in the roof capable of resisting roll forces, sag loads and lateral buckling.

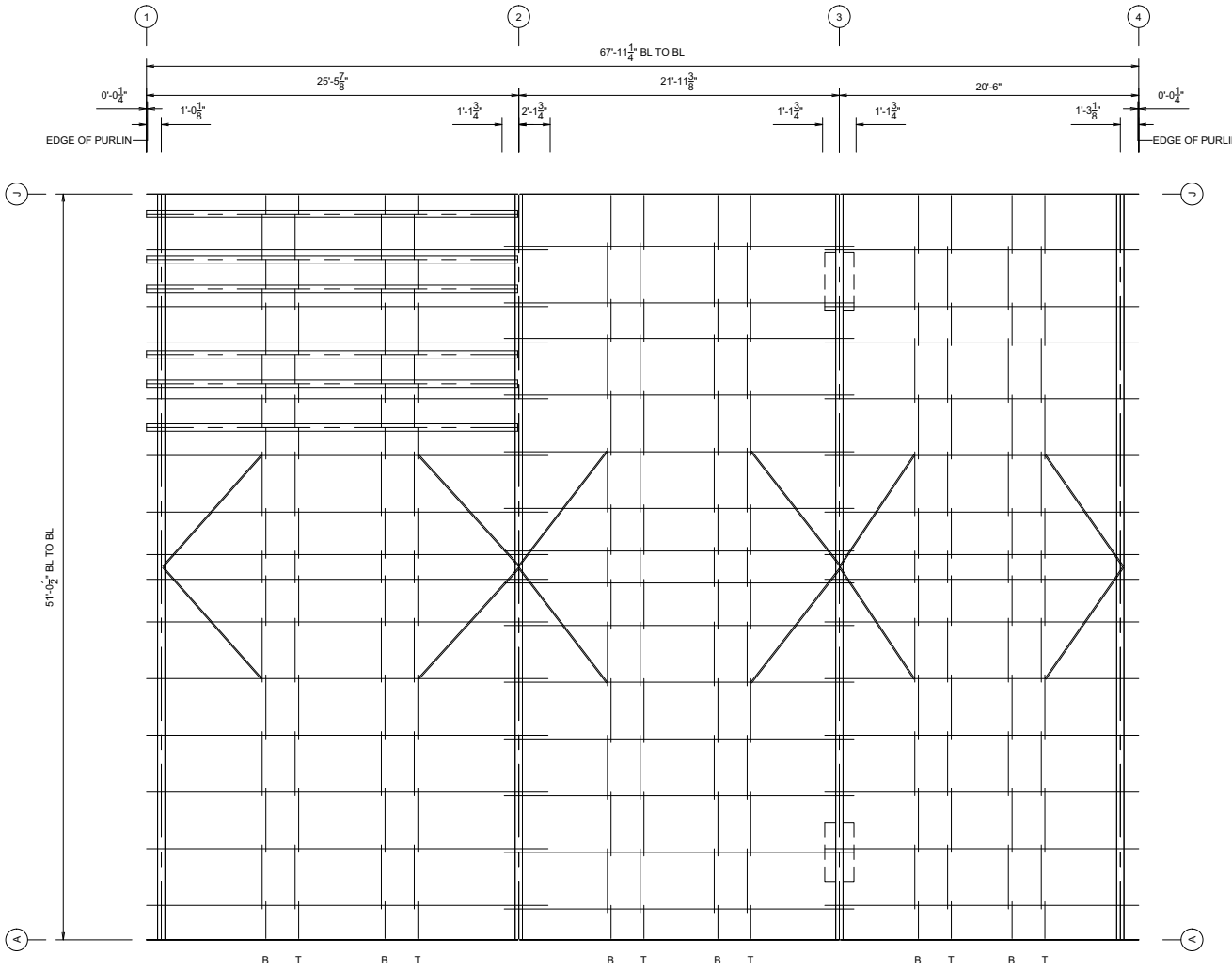
The anchorage of the 24 ga Metal Sales Seam-Loc roof panels in the corner zones of the roof will require the use of S-5! Clamps (not by Chief Buildings) to withstand the uplift loads present on the roof panels.

The roof panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Roof Live Load = 20 psf
Roof Snow Load = 38.17 psf
Roof Panel Suction (Interior Zone) = 25.4 psf
Roof Panel Suction (Edge Zone) = 44.22 psf
Roof Panel Suction (Corner Zone) = 65.39 psf
(Edge/Corner Zone Width = 5.1 ft.)

Note: See Figure 6-11C of ASCE 7-05 for location of edge and corner zones.

Chief Buildings neither assumes nor accepts any responsibility for the design of the roof panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the roof panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.



PURLIN BRACING PLAN

REFERENCE NOTES

1. ALL PURLINS ATTACH TO FRAMING USING "STD" ATTACHMENT UNLESS NOTED. REFER TO GD MANUAL SECTION 4 FOR BOLT LOCATIONS.

2. "T" = TOP SAG ANGLE.
"B" = BOTTOM SAG ANGLE.

REVISIONS
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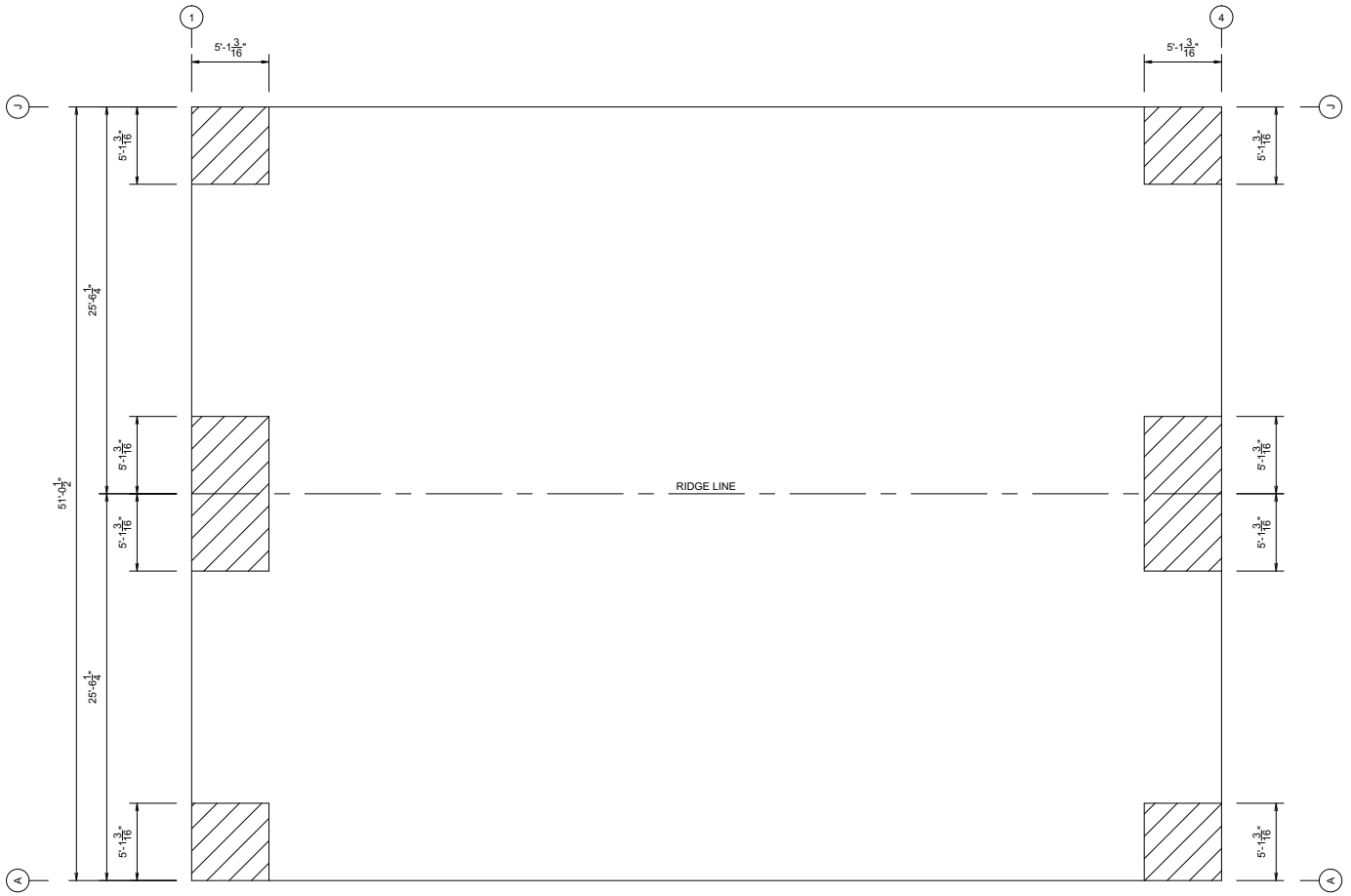
ROOF FRAMING DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	RF2 / RF3
BLO		B3004219	
26-MAR-12			



S5! WINDCLAMP (BY OTHERS) LOCATION REQUIREMENTS

REFERENCE NOTES:

1. THE DIMENSIONED, SHADED AREA REPRESENTS THE END AND/OR SIDE ZONES. ALL STANDING SEAM CLIPS WITHIN THE SHADED AREA ARE TO RECEIVE THE S5! UD WINDCLAMPS.

REVISIONS
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"S5! UD" WINDCLAMP (BY OTHERS) LOCATIONS

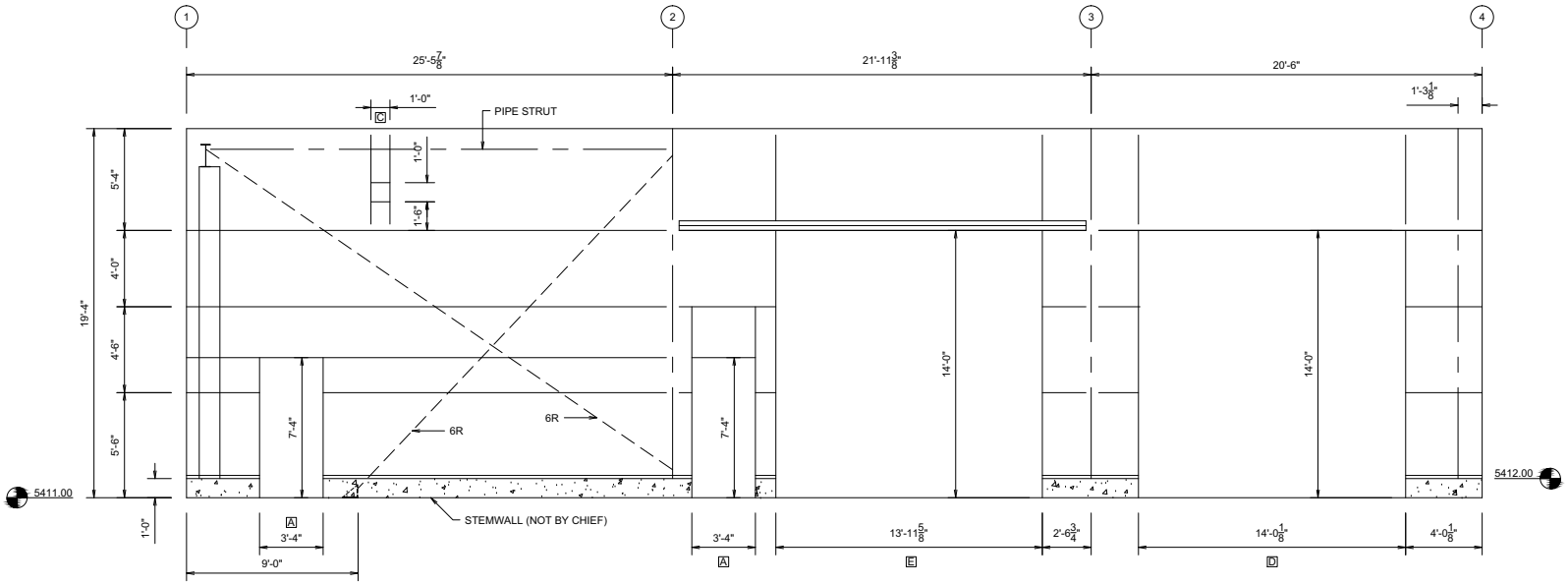
HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	RF3
BLO		B3004219	RF3
26-MAR-12			



SIDEWALL FRAMING ELEVATION

COL. LINE A GIRT DEPTH: 8"

Sheeting
(Wall Panel Not by Chief Buildings)

The 16" wide 20 ga. Stucco Wall Panel with sealant provided by ***Custom Panel Systems*** must provide structural support to all secondary framing. These panels must have a positive attachment to Chief Buildings' secondary framing capable of resisting roll forces, sag loads, lateral buckling, etc. in accordance with AISI specifications.

The wall panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Wall Panel Pressure (Interior Zone) = 27.8 psf
Wall Panel Suction (Interior Zone) = 30.1 psf
Wall Panel Suction (Corner Zone) = 37.2 psf
(Corner Zone Width = 5.1 ft.)

The wall panels must meet the minimum properties and connections given below, which will be considered adequate to provide support to the secondary framing.

Minimum Wall Panel Properties: Ixx = 0.0368 in4/ft Sxx = 0.0447 in3/ft

Minimum Connection Requirements:
(1) #12 structural fastener to secondary at 1'-4" o.c.

Chief Buildings neither assumes nor accepts any responsibility for the design of the wall panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the wall panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

MATERIAL CALLOUTS:

6R denotes 3/4" rod bracing
Pipe Strut is 6 5/8" diameter pipe
All girts are 8" C-section, 16 gage mat'l. (unless otherwise noted)
Girts in Bay 1 are 8" C-Section, 12 gage mat'l.
Lip-Lip header is 8" C-section, 16 gage mat'l.
Walkdoor jambs are 8" C-section, 16 gage mat'l.
Hi-lift door jambs are 8" C-Section, 14 gage mat'l.
All louver framing members are 8", 16 gage mat'l.

REVISIONS
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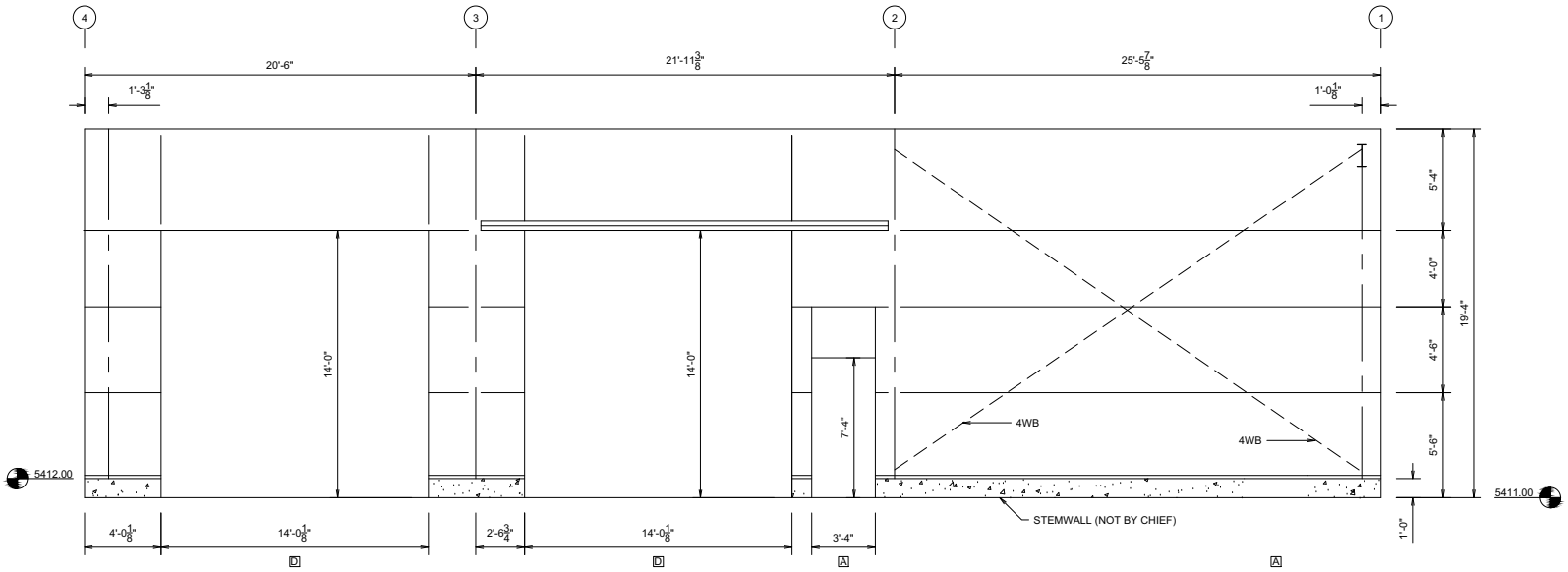
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

SIDEWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	S1
BLO		B3004219	S2
26-MAR-12			



SIDEWALL FRAMING ELEVATION

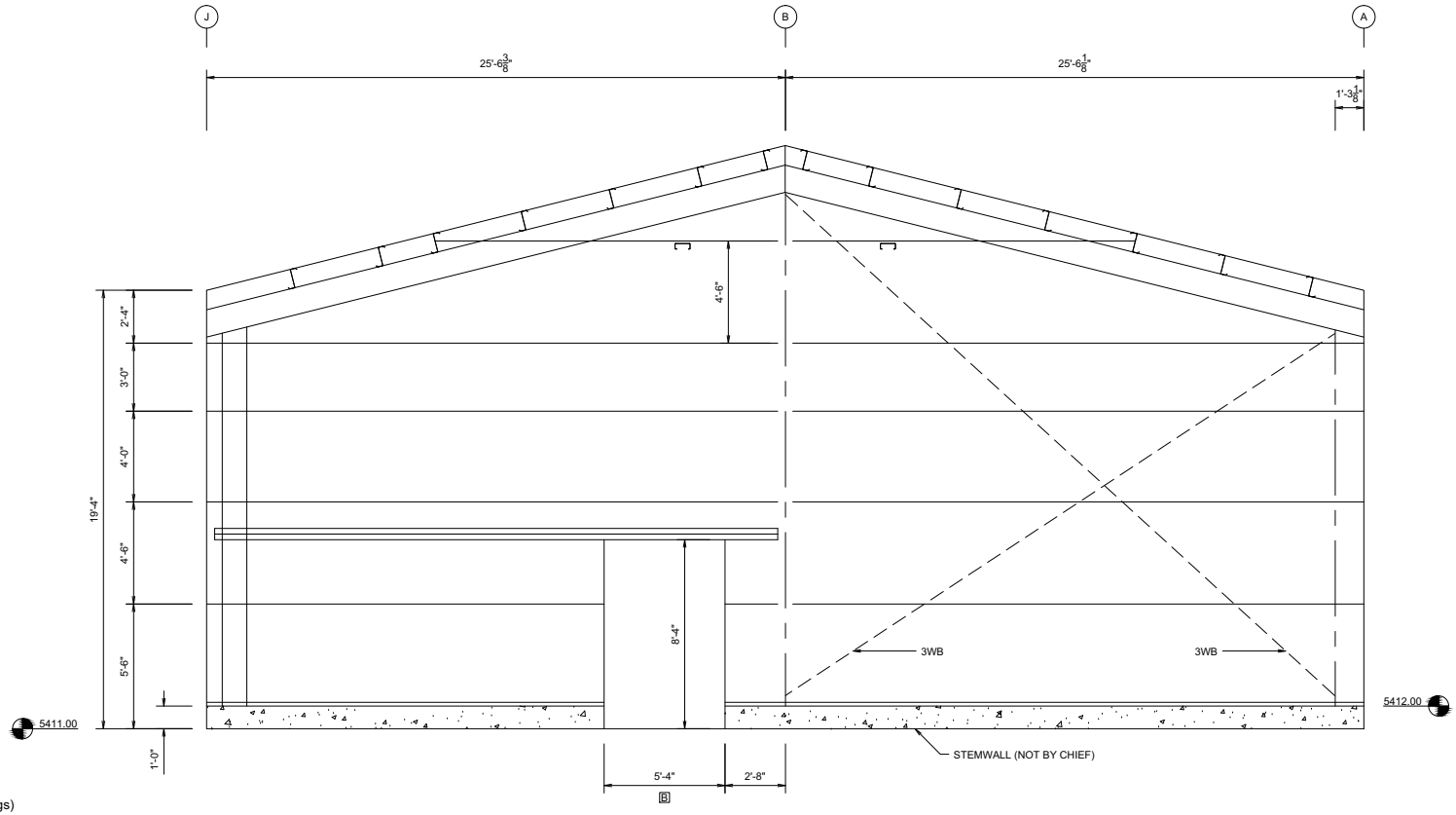
COL. LINE J GIRT DEPTH: 8"

MATERIAL CALLOUTS:

4WB denotes 1/2" cable bracing
All girts are 8" C-section, 16 gage mat'l. (unless otherwise noted)
Girts in Bay 3 are 8" C-Section, 12 gage mat'l.
Lip-Lip header is 8" C-section, 16 gage mat'l.
Walkdoor jambs are 8" C-section, 16 gage mat'l.
Hi-lift door jambs are 8" C-Section, 14 gage mat'l.
All louver framing members are 8", 16 gage mat'l.

REVISIONS	NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.	SIDEWALL DRAWINGS
4		HEATH STEEL / WEAVER CONST. MANAGEMENT
3		FOUNTAIN, CO
2		RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12
1 REVISED PER CO #3 & 4 26-MAR-12 BLO		CHIEF BUILDINGS P.O. BOX 3078 GRAND ISLAND, NE 68802-3078

DRAWN	CHECK	ORDER NO.	S2
BLO		B3004219	S2
26-MAR-12			



ENDWALL FRAMING ELEVATION

COL. LINE 1 GIRT DEPTH: 8"

Sheeting
(Wall Panel Not by Chief Buildings)

The 16" wide 20 ga. Stucco Wall Panel with sealant provided by ***Custom Panel System***s must provide structural support to all secondary framing. These panels must have a positive attachment to Chief Buildings' secondary framing capable of resisting roll forces, sag loads, lateral buckling, etc. in accordance with AISI specifications.

The wall panels not provided by Chief Buildings and their anchorage to the secondary framing must be capable of resisting all loads required by the specified building code and listed below.

Wall Panel Pressure (Interior Zone) = 27.8 psf
Wall Panel Suction (Interior Zone) = 30.1 psf
Wall Panel Suction (Corner Zone) = 37.2 psf
(Corner Zone Width = 5.1 ft.)

The wall panels must meet the minimum properties and connections given below, which will be considered adequate to provide support to the secondary framing.

Minimum Wall Panel Properties: Ixx = 0.0368 in4/ft Sxx = 0.0447 in3/ft

Minimum Connection Requirements:
(1) #12 structural fastener to secondary at 1'-4" o.c.

Chief Buildings neither assumes nor accepts any responsibility for the design of the wall panels and their anchorage nor coordination of compatibility between products provided by Chief Buildings and the wall panels not provided by Chief Buildings. It is the responsibility of the Buyer/Contractor and/or End Owner to have this design performed by a registered design professional.

MATERIAL CALLOUTS:

3WB denotes 3/8" cable bracing
All girts are 8" C-section, 12 gage mat'l. (unless otherwise noted)
Lips down girt is 8" C-section, 14 gage mat'l.
Lip-Lip header is 8" C-section, 16 gage mat'l.
All jambs are 8" C-section, 16 gage mat'l.
All endwall rafter beams are built-up sections, w/ 6" x 5/16" flanges, and 13 3/8" x 5/32" webs.
All corner posts and endwall posts are built-up sections, w/ 8" x 3/8" flanges, and 12 1/4" x 5/32" webs.

REVISIONS
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1 REVISED PER CO #3 & 4 26-MAR-12 BLO

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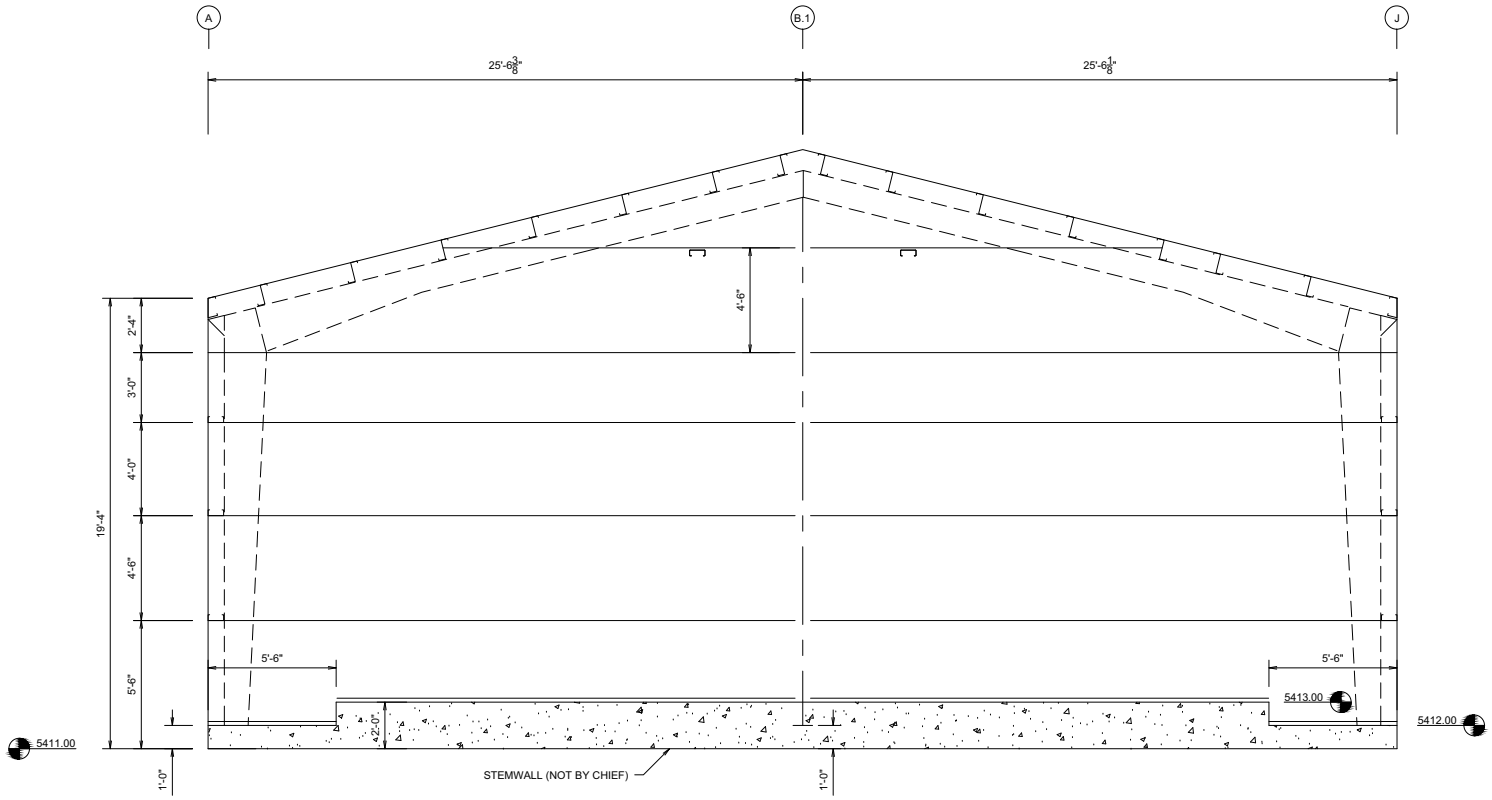
ENDWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	E1
BLO		B3004219	E2
26-MAR-12			



Future Expansion
Expandable Full Frame Endwall

The frame at line 4 is an expandable full load frame. The frame has been designed for a future expansion of 21'-31/8"centerline-to-centerline of the future frame.

Where the frame cross section requires flange braces both sides of the column or rafter, these flange braces must be installed upon future expansion.

ENDWALL FRAMING ELEVATION

COL. LINE 4 GIRT DEPTH: 8"

MATERIAL CALLOUTS:

All girts are 8" C-section, 12 gage mat'l. (unless otherwise noted)
Lips down girts are 8" C-section, 14 gage mat'l.
Endwall post is built-up section, w/ 8" x 3/8" flanges, and 12 1/4" x 5/32" webs.

REVISIONS
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1 REVISED PER CO #3 & 4 26-MAR-12 BLO

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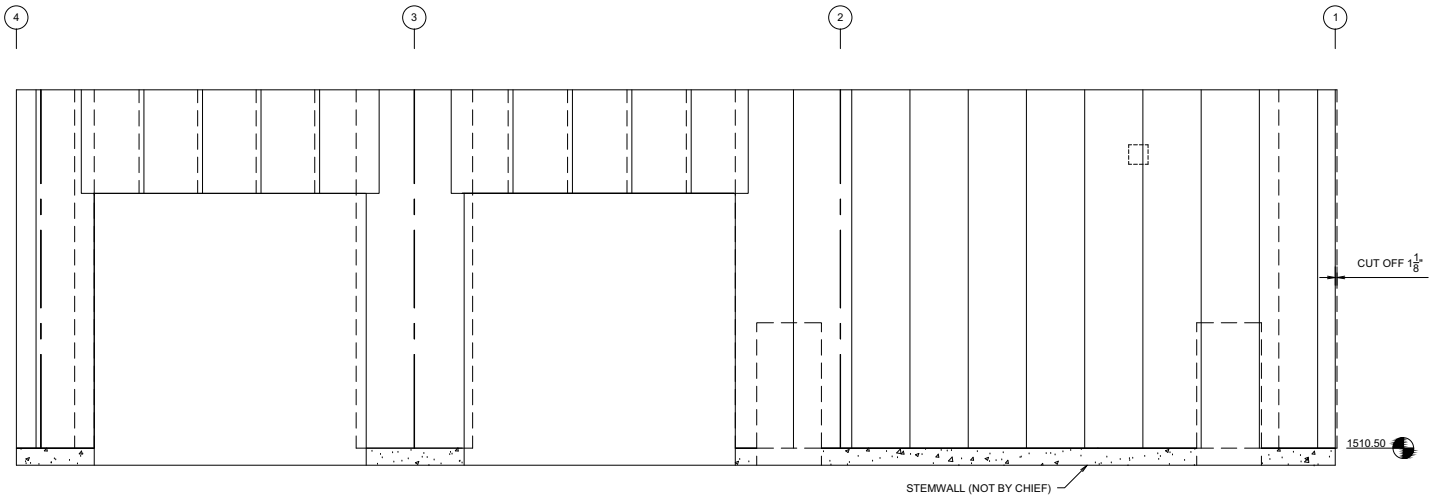
ENDWALL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/4" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	E2
BLO		B3004219	
26-MAR-12			E2



SIDEWALL LINER PANEL ELEVATION

COL. LINE A — CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REFERENCE NOTES

1. FOR OPENING TRIMS, REFER TO GENERAL DETAILS.

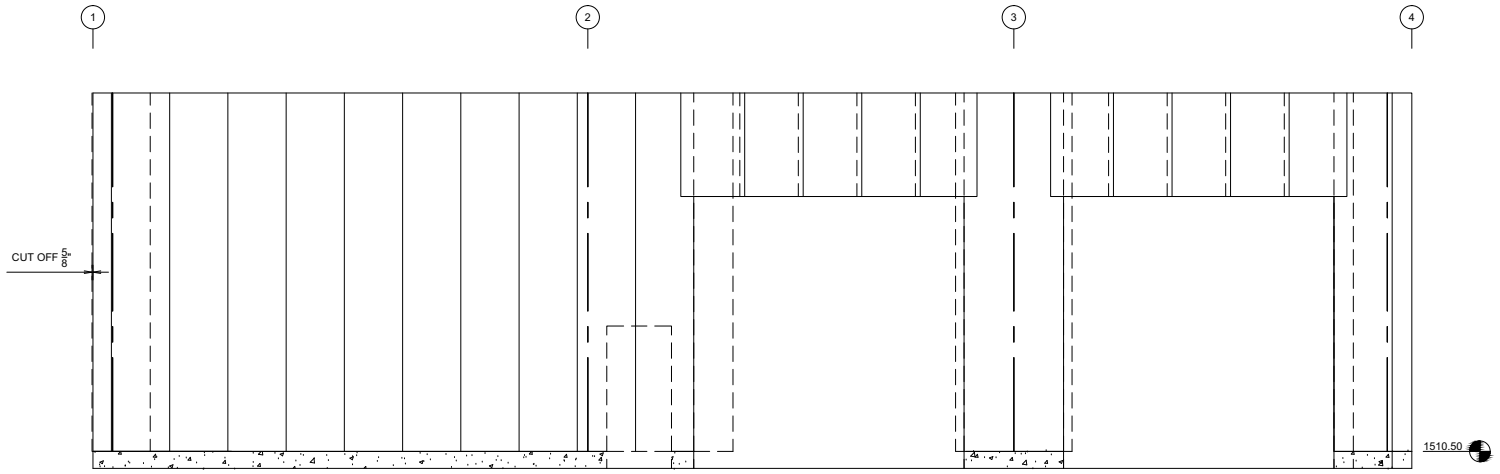
REVISIONS
4
3
2
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

LINER PANEL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/2" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	LP1
BLO		B3004219	LP4
26-MAR-12			



SIDEWALL LINER PANEL ELEVATION

COL. LINE J CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REFERENCE NOTES

1. FOR OPENING TRIMS, REFER TO GENERAL DETAILS.

REVISIONS
4
3
2
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

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RF 51'-0 1/2" X 67'-11 1/2" X 19'-4" BAYS VARY 3:12

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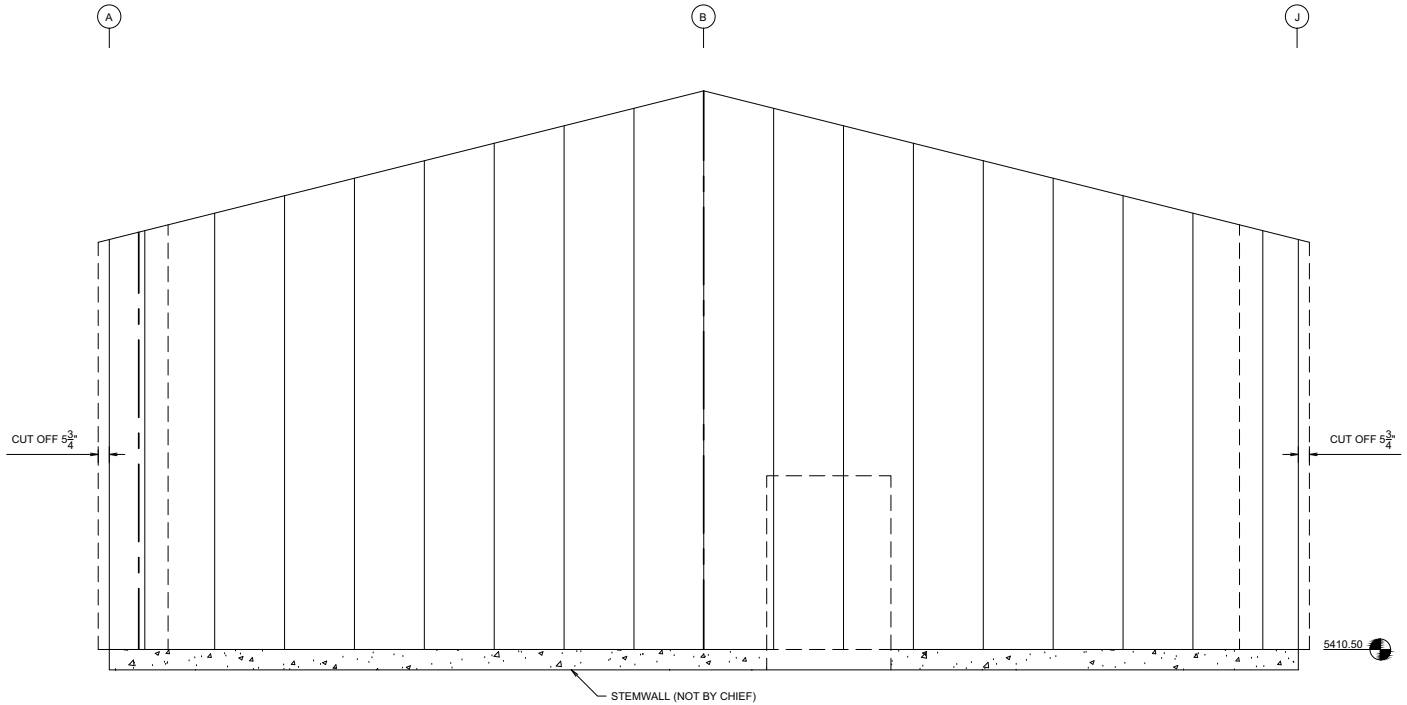
DRAWN	CHECK	ORDER NO.	LP2
BLO		B3004219	LP4
26-MAR-12			



ENDWALL LINER PANEL ELEVATION

COL. LINE 1 CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REFERENCE NOTES

1. FOR OPENING TRIMS, REFER TO GENERAL DETAILS.

REVISIONS
4
3
2
1 REVISED PER CO #3 & 4 26-MAR-12 BLO

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

LINER PANEL DRAWINGS

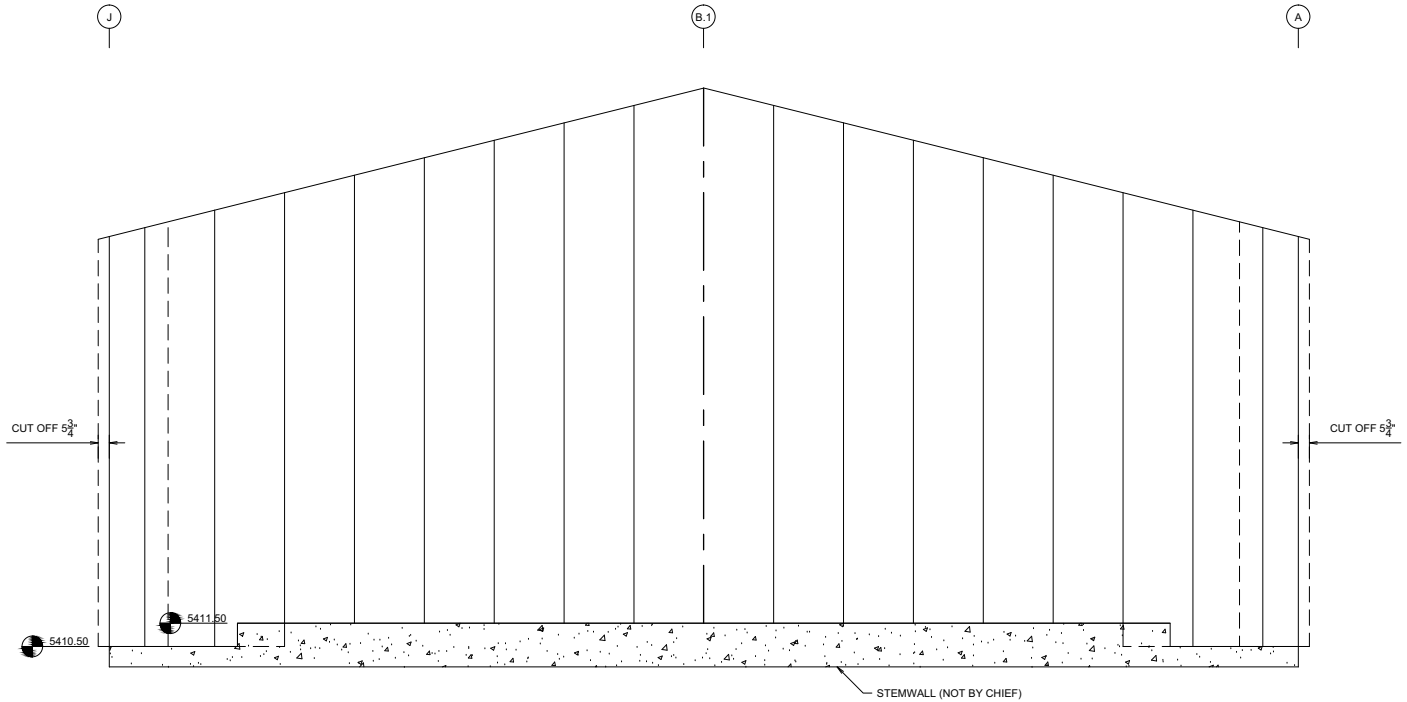
HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'-0 1/2" X 67'-11 1/2" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS P.O. BOX 3078 GRAND ISLAND, NE 68802-3078

DRAWN	CHECK	ORDER NO.	LP3
BLO		B3004219	LP4
26-MAR-12			



ENDWALL LINER PANEL ELEVATION

COL. LINE 4 CS PANEL

MATERIAL CALLOUTS:

All Liner Panel is CS, 29 gage 80 ksi material
All trim is 26 gage, 33 ksi material

REVISIONS
4
3
2
1

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

LINER PANEL DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'-0 1/2" X 67'-11 1/2" X 19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
P.O. BOX 3078
GRAND ISLAND, NE
68802-3078

DRAWN	CHECK	ORDER NO.	LP4
BLO		B3004219	
26-MAR-12			LP4

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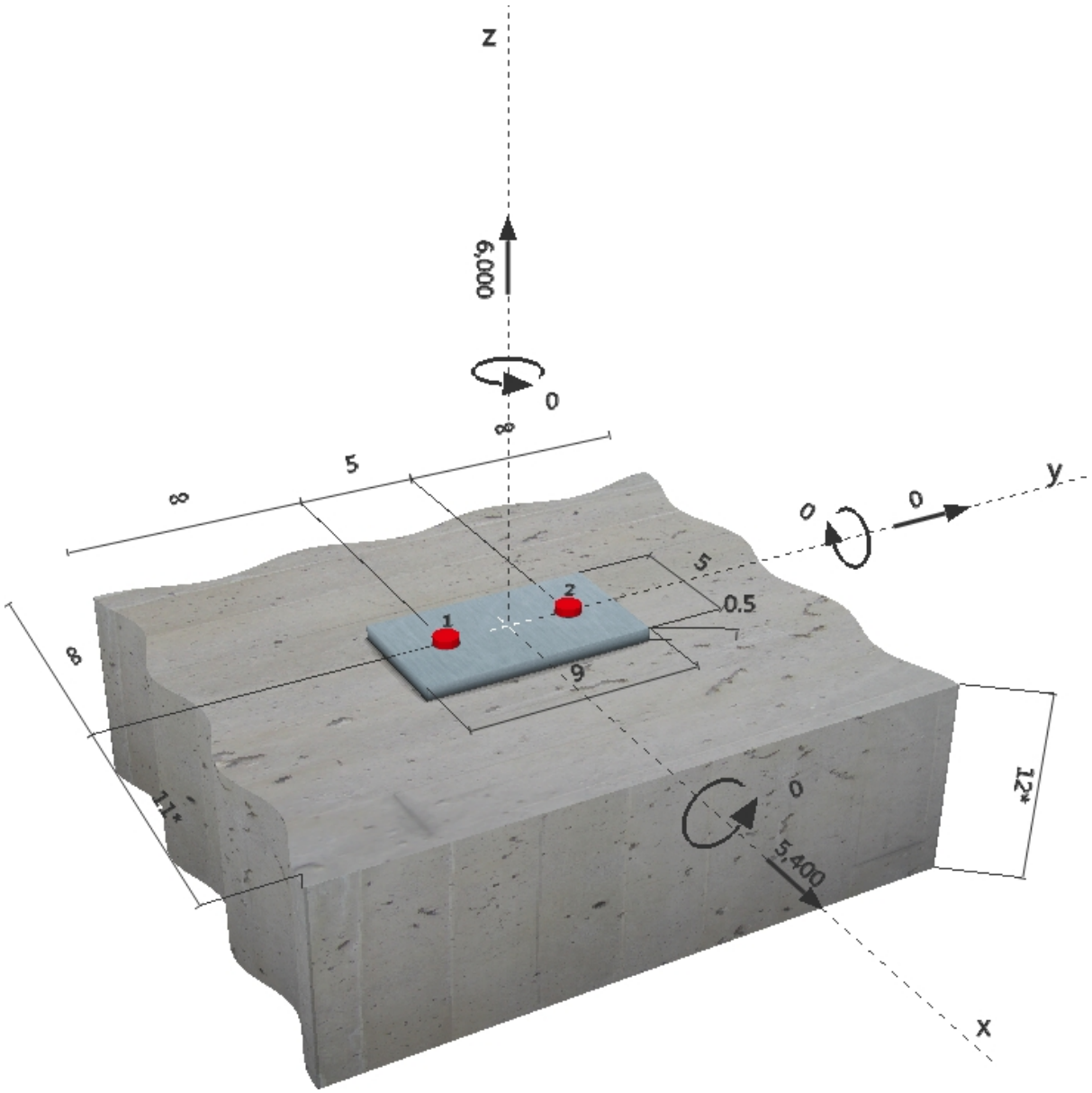
Specifier:	Tyler Ammerman	Project:	Harold Thompson
Address:	14611 Lower Fountain Heights, Fountain, CO 80817	Sub-Project I Pos. No.:	Sheet A1 note "T"
Phone I Fax:	303-908-1229 | 719-382-7910	Date:	3/6/2012
E-Mail:	tammerman@weavercm.com		

Specifier's comments: Equipment & Maintenance Building

1. Input data

Anchor type and diameter:	**HIT-HY 150 MAX-SD + HAS B7, 1**
Effective embedment depth:	$h_{ef,act}$ = 6.000 in. ($h_{ef,limit}$ = - in.)
Material:	ASTM A 193 Grade B7
Evaluation Service Report::	ESR 3013
Issued I Valid:	4/1/2010 | -
Proof:	design method ACI 318 / AC308
Stand-off installation:	e_b = 0.000 in. (no stand-off); t = 0.500 in.
Anchor plate:	l_x x l_y x t = 5.000 x 9.000 x 0.500 in. (Recommended plate thickness: not calculated)
Profile	no profile
Base material:	cracked concrete , , f_c' = 4500 psi; h = 12.000 in., Temp. short/long: 32/32°F
Installation:	hammer drilled hole, installation condition: dry
Reinforcement:	tension: condition B, shear: condition B; no supplemental splitting reinforcement present edge reinforcement: none or < No. 4 bar
Seismic loads (cat. C, D, E, or F):	yes (D.3.3.4)

Geometry [in.] & Loading [lb, in.-lb]



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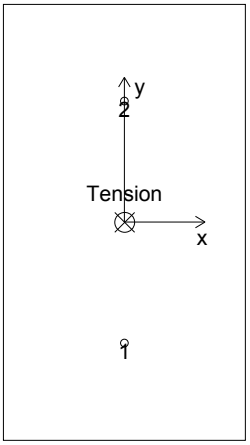
Phone I Fax:	303-908-1229 | 719-382-7910	Date:	3/6/2012
E-Mail:	tammerman@weavercm.com		

2. Load case/Resulting anchor forces

Load case (governing):

Anchor reactions [lb]
Tension force: (+Tension, -Compression)

Anchor	Tension force	Shear force	Shear force x	Shear force y
1	2999	2700	2700	0
2	2999	2700	2700	0



max. concrete compressive strain [‰]: 0.00
max. concrete compressive stress [psi]: 0
resulting tension force in (x/y)=(0.000/0.000) [lb]: 6000
resulting compression force in (x/y)=(0/0) [lb]: 0

3. Tension load

Proof	Load N_{ua} [lb]	Capacity ϕN_n [lb]	Utilization β_N [%] = $N_{ua}/\phi N_n$	Status
Steel Strength*	3000	56780	5	OK
Bond Strength**	6000	10521	57	OK
Concrete Breakout Strength**	6000	10440	57	OK

* anchor having the highest loading **anchor group (anchors in tension)

Steel Strength

Equations

N_{sa} = ESR value	refer to ICC-ES ESR 3013
$\phi N_{steel} \geq N_{ua}$	ACI 318-08 Eq. (D-1)

Variables

n	$A_{se,N}$ [in.^{2}]	f_{uta} [psi]
1	0.61	125000

Calculations

N_{sa} [lb]
75706

Results

N_{sa} [lb]	ϕ_{steel}	ϕN_{sa} [lb]	N_{ua} [lb]
75706	0.750	56780	3000

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Phone I Fax:	303-908-1229 | 719-382-7910	Date:	3/6/2012
E-Mail:	tammerman@weavercm.com		

Bond Strength

Equations

$N_{ag} = \left(\frac{A_{Na}}{A_{Na0}}\right) \psi_{ed,Na}\, \psi_{g,Na}\, \psi_{ec,Na}\, \psi_{p,Na}\, N_{a0}$ ICC-ES AC308 Eq. (D-16b)

$\phi\, N_{ag} \geq N_{ua}$ ACI 318-08 Eq. (D-1)

A_{Na} = see ICC-ES AC308, Part D.5.3.7

$A_{Na0} = s_{cr,Na}^2$ ICC-ES AC308 Eq. (D-16c)

$s_{cr,Na} = 20d \sqrt{\frac{\tau_{k,uncr}}{1450}} \leq 3\, h_{ef}$ ICC-ES AC308 Eq. (D-16d)

$c_{cr,Na} = \frac{s_{cr,Na}}{2}$ ICC-ES AC308 Eq. (D-16e)

$\psi_{ed,Na} = 0.7 + 0.3 \left(\frac{c_{a,min}}{c_{cr,Na}}\right) \leq 1.0$ ICC-ES AC308 Eq. (D-16m)

$\psi_{g,Na} = \psi_{g,Na0} + \left[\left(\frac{s_{avg}}{s_{cr,Na}}\right)^{0.5} \cdot (1 - \psi_{g,Na0})\right] \geq 1.0$ ICC-ES AC308 Eq. (D-16g)

$\psi_{g,Na0} = \sqrt{n} - \left[(\sqrt{n} - 1) \cdot \left(\frac{\tau_{k,c}}{\tau_{k,max,c}}\right)^{1.5}\right] \geq 1.0$ ICC-ES AC308 Eq. (D-16h)

$\tau_{k,max,c} = \frac{k_c}{\pi \cdot d} \sqrt{h_{ef} \cdot f_c'}$ ICC-ES AC308 Eq. (D-16i)

$\psi_{ec,Na} = \left(\frac{1}{1 + \frac{2e_N'}{s_{cr,Na}}}\right) \leq 1.0$ ICC-ES AC308 Eq. (D-16j)

$\psi_{p,Na} = MAX\left(\frac{c_{a,min}}{c_{ac}}, \frac{c_{cr,Na}}{c_{ac}}\right) \leq 1.0$ ICC-ES AC308 Eq. (D-16p)

$N_{a0} = \tau_{k,c} \cdot \kappa_{bond} \cdot \pi \cdot d \cdot h_{ef}$ ICC-ES AC308 Eq. (D-16f)

Variables

$\tau_{k,c,uncr}$ [psi]	d_{anchor} [in.]	h_{ef} [in.]	$c_{a,min}$ [in.]	s_{avg} [in.]	n	$\tau_{k,c}$ [psi]	k_c
1440	1.000	6.000	11.000	5.000	2	896	17

f_c' [psi]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	c_{ac} [in.]	κ_{bond}
4500	0.000	0.000	9.000	1.00

Calculations

$s_{cr,Na}$ [in.]	$c_{cr,Na}$ [in.]	A_{Na} [in.^{2}]	A_{Na0} [in.^{2}]	$\psi_{ed,Na}$	$\tau_{k,max}$ [psi]	$\psi_{g,Na0}$	$\psi_{g,Na}$
18.000	9.000	414.00	324.00	1.000	889	1.000	1.000

$\psi_{ec1,Na}$	$\psi_{ec2,Na}$	$\psi_{p,Na}$	N_{a0} [lb]
1.000	1.000	1.000	16890

Results

N_{ag} [lb]	ϕ_{bond}	$\phi_{seismic}$	$\alpha_{N,seis}$	$\phi\, \alpha_{N,seis}\, N_{ag}$ [lb]	N_{ua} [lb]
21582	0.650	0.750	1.000	10521	6000

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Phone I Fax:	303-908-1229 | 719-382-7910	Date:	3/6/2012
E-Mail:	tammerman@weavercm.com		

Concrete Breakout Strength

Equations

$N_{cbg} = \left(\frac{A_{Nc}}{A_{Nc0}}\right) \psi_{ec,N}\, \psi_{ed,N}\, \psi_{c,N}\, \psi_{cp,N}\, N_b$ ACI 318-08 Eq. (D-5)

$\phi\, N_{cbg} \geq N_{ua}$ ACI 318-08 Eq. (D-1)

A_{Nc} see ACI 318-08, Part D.5.2.1, Fig. RD.5.2.1(b)

$A_{Nc0} = 9\, h_{ef}^2$ ACI 318-08 Eq. (D-6)

$\psi_{ec,N} = \left(\frac{1}{1 + \frac{2\, e'_N}{3\, h_{ef}}}\right) \leq 1.0$ ACI 318-08 Eq. (D-9)

$\psi_{ed,N} = 0.7 + 0.3 \left(\frac{c_{a,min}}{1.5 h_{ef}}\right) \leq 1.0$ ACI 318-08 Eq. (D-11)

$\psi_{cp,N} = \text{MAX}\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5 h_{ef}}{c_{ac}}\right) \leq 1.0$ ACI 318-08 Eq. (D-13)

$N_b = k_c\, \lambda\, \sqrt{f'_c}\, h_{ef}^{1.5}$ ACI 318-08 Eq. (D-7)

Variables

h_{ef} [in.]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	$c_{a,min}$ [in.]	$\psi_{c,N}$	c_{ac} [in.]	k_c	λ
6.000	0.000	0.000	11.000	1.000	9.000	17	1

f'_c [psi]
4500

Calculations

A_{Nc} [in.^{2}]	A_{Nc0} [in.^{2}]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
414.00	324.00	1.000	1.000	1.000	1.000	16760

Results

N_{cbg} [lb]	$\phi_{concrete}$	$\phi_{seismic}$	$\phi\, N_{cbg}$ [lb]	N_{ua} [lb]
21416	0.650	0.750	10440	6000

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E-Mail:	tammerman@weavercm.com		

4. Shear load

Proof	Load V_{ua} [lb]	Capacity ϕV_n [lb]	Utilization β_V [%] = $V_{ua}/\phi V_n$	Status
Steel Strength*	2700	20667	13	OK
*Steel failure (with lever arm)**	N/A	N/A	N/A	N/A
Pryout Strength**	5400	22487	24	OK
Concrete edge failure in direction x+**	5400	12639	43	OK

* anchor having the highest loading **anchor group (relevant anchors)

Steel Strength

Equations

$V_{sa} = \alpha_{V,seis} (n\ 0.6\ A_{se,V}\ f_{uta})$ refer to ICC-ES ESR 3013

$\phi\ V_{steel} \geq V_{ua}$ ACI 318-08 Eq. (D-1)

Variables

n	$A_{se,V}$ [in.^{2}]	f_{uta} [psi]	$\alpha_{V,seis}$	$(n\ 0.6\ A_{se,V}\ f_{uta})$ [lb]
1	0.61	125000	0.700	45423

Calculations

V_{sa} [lb]
31796

Results

V_{sa} [lb]	ϕ_{steel}	$\phi\ V_{sa}$ [lb]	V_{ua} [lb]
31796	0.650	20667	2700

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E-Mail:	tammerman@weavercm.com		

Pryout Strength (Concrete Breakout Strength controls)

Equations

$V_{cpg} = k_{cp} \left[\left(\frac{A_{Nc}}{A_{Nc0}} \right) \psi_{ec,N} \psi_{ed,N} \psi_{c,N} \psi_{cp,N} N_b \right]$ ACI 318-08 Eq. (D-31)

$\phi V_{cpg} \geq V_{ua}$ ACI 318-08 Eq. (D-1)

A_{Nc} see ACI 318-08, Part D.5.2.1, Fig. RD.5.2.1(b)

$A_{Nc0} = 9 h_{ef}^2$ ACI 318-08 Eq. (D-6)

$\psi_{ec,N} = \left(\frac{1}{1 + \frac{2 e'_N}{3 h_{ef}}} \right) \leq 1.0$ ACI 318-08 Eq. (D-9)

$\psi_{ed,N} = 0.7 + 0.3 \left(\frac{c_{a,min}}{1.5 h_{ef}} \right) \leq 1.0$ ACI 318-08 Eq. (D-11)

$\psi_{cp,N} = MAX\left(\frac{c_{a,min}}{c_{ac}}, \frac{1.5 h_{ef}}{c_{ac}} \right) \leq 1.0$ ACI 318-08 Eq. (D-13)

$N_b = k_c \lambda \sqrt{f'_c} h_{ef}^{1.5}$ ACI 318-08 Eq. (D-7)

Variables

k_{cp}	h_{ef} [in.]	$e_{c1,N}$ [in.]	$e_{c2,N}$ [in.]	$c_{a,min}$ [in.]	$\psi_{c,N}$	c_{ac} [in.]	k_c
2	6.000	0.000	0.000	11.000	1.000	9.000	17

λ	f'_c [psi]
1	4500

Calculations

A_{Nc} [in.^{2}]	A_{Nc0} [in.^{2}]	$\psi_{ec1,N}$	$\psi_{ec2,N}$	$\psi_{ed,N}$	$\psi_{cp,N}$	N_b [lb]
414.00	324.00	1.000	1.000	1.000	1.000	16760

Results

V_{cpg} [lb]	$\phi_{concrete}$	$\phi_{seismic}$	ϕV_{cpg} [lb]	V_{ua} [lb]
42832	0.700	0.750	22487	5400

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E-Mail:	tammerman@weavercm.com		

Concrete edge failure in direction x+

Equations

$V_{cbg} = \left(\frac{A_{Vc}}{A_{Vc0}}\right) \psi_{ec,V}\, \psi_{ed,V}\, \psi_{c,V}\, \psi_{h,V}\, \psi_{parallel,V}\, V_b$ ACI 318-08 Eq. (D-22)

$\phi\, V_{cbg} \geq V_{ua}$ ACI 318-08 Eq. (D-1)

A_{Vc} see ACI 318-08, Part D.6.2.1, Fig. RD.6.2.1(b)

$A_{Vc0} = 4.5\, c_{a1}^2$ ACI 318-08 Eq. (D-23)

$\psi_{ec,V} \left(\frac{1}{1 + \frac{2e'_v}{3c_{a1}}}\right) \leq 1.0$ ACI 318-08 Eq. (D-26)

$\psi_{ed,V} = 0.7 + 0.3\left(\frac{c_{a2}}{1.5c_{a1}}\right) \leq 1.0$ ACI 318-08 Eq. (D-28)

$\psi_{h,V} = \sqrt{\frac{1.5c_{a1}}{h_a}} \geq 1.0$ ACI 318-08 Eq. (D-29)

$V_b = \left(7\left(\frac{l_e}{d_a}\right)^{0.2} \sqrt{d_a}\right) \lambda \sqrt{f'_c}\, c_{a1}^{1.5}$ ACI 318-08 EQ. (D-24)

Variables

c_{a1} [in.]	c_{a2} [in.]	e_{cV} [in.]	$\psi_{c,V}$	h_a [in.]	l_e [in.]	λ	d_a [in.]
11.000	-	0.000	1.000	12.000	6.000	1	1.000

f'_c [psi]	$\psi_{parallel,V}$
4500	1.000

Calculations

A_{Vc} [in.^{2}]	A_{Vc0} [in.^{2}]	$\psi_{ec,V}$	$\psi_{ed,V}$	$\psi_{h,V}$	V_b [lb]
456.00	544.50	1.000	1.000	1.173	24515

Results

V_{cbg} [lb]	$\phi_{concrete}$	$\phi_{seismic}$	$\phi\, V_{cbg}$ [lb]	V_{ua} [lb]
24073	0.700	0.750	12639	5400

5. Combined tension and shear loads

$\beta_N = N_u/\phi N_n$	$\beta_V = V_u/\phi V_n$	ζ	Utilization $\beta_{N,V}$ [%]	Status
0.575	0.427	5/3	64	OK

$\beta_{NV} = \beta_N^{\zeta} + \beta_V^{\zeta} <= 1$

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E-Mail:	tammerman@weavercm.com		

6. Warnings

- Condition A applies when supplementary reinforcement is used. The Φ factor is increased for non-steel Design Strengths except Pullout Strength and Pryout strength. Condition B applies when supplementary reinforcement is not used and for Pullout Strength and Pryout Strength. Refer to ACI 318, Part D.4.4(c).
- **Design Strengths of adhesive anchor systems are influenced by the cleaning method. Refer to the INSTRUCTIONS FOR USE given in the Evaluation Service Report for cleaning and installation instructions**
- The present version of the software does not account for adhesive anchor special design provisions corresponding to overhead applications. Refer to the ICC-ES Evaluation Service Report (e.g. section 4.1.1 of the ICC-ESR 2322) for details.
- Checking the transfer of loads into the base material and the shear resistance are required in accordance with ACI318 or the relevant standard!
- The anchor plate is assumed to be sufficiently stiff in order to be not deformed when subjected to the actions!
- An anchor design approach for structures assigned to Seismic Design Category C, D, E or F is given in ACI 318-08 Appendix D, Part D.3.3.4 that requires the governing design strength of an anchor or group of anchors be limited by ductile steel failure. If this is NOT the case, Part D.3.3.5 requires that the attachment that the anchor is connecting to the structure shall be designed so that the attachment will undergo ductile yielding at a load level corresponding to anchor forces no greater than the controlling design strength. In lieu of D.3.3.4 and D.3.3.5, the minimum design strength of the anchors shall be multiplied by a reduction factor per D.3.3.6.
  An alternative anchor design approach to ACI 318-08, Part D.3.3 is given in IBC 2009, Section 1908.1.9. This approach contains "Exceptions" that may be applied in lieu of D.3.3 for applications involving "non-structural components" as defined in ASCE 7, Section 13.4.2.
  An alternative anchor design approach to ACI 318-08, Part D.3.3 is given in IBC 2009, Section 1908.1.9. This approach contains "Exceptions" that may be applied in lieu of D.3.3 for applications involving "wall out-of-plane forces" as defined in ASCE 7, Equation 12.11-1 or Equation 12.14-10.
- It is the responsibility of the user when inputing values for brittle reduction factors ($\phi_{nonductile}$) different than those noted in ACI 318-08, Part D.3.3.6 to determine if they are consistent with the design provisions of ACI 318-08, ASCE 7 and the governing building code.
  Selection of $\phi_{nonductile}$ = 1.0 as a means of satisfying ACI 318-08, Part D.3.3.5 assumes the user has designed the attachment that the anchor is connecting to undergo ductile yielding at a force level <= the design strengths calculated per ACI 318-08, Part D.3.3.3.

Fastening does not meet the design criteria!

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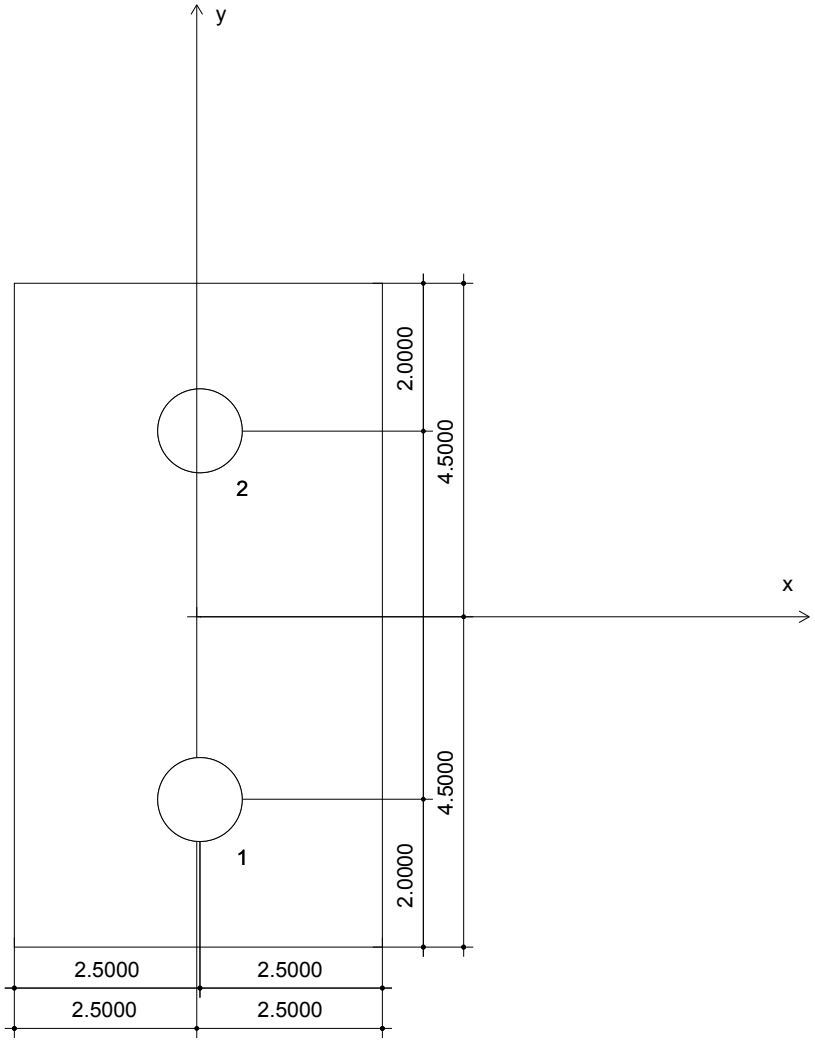
Specifier:	Tyler Ammerman	Project:	Harold Thompson
Address:	14611 Lower Fountain Heights, Fountain, CO 80817	Sub-Project I Pos. No.:	Sheet A1 note "T"
Phone I Fax:	303-908-1229 | 719-382-7910	Date:	3/6/2012
E-Mail:	tammerman@weavercm.com		

7. Installation data

Anchor plate, steel: -
Profile: no profile
Hole diameter in the fixture: d_f = 1.125 in.
Plate thickness (input): 0.500 in.
Recommended plate thickness: not calculated

Anchor type and diameter: HIT-HY 150 MAX-SD + HAS B7, 1
Installation torque: 1800.003 in.-lb
Hole diameter in the base material: 1.125 in.
Hole depth in the base material: 6.000 in.
Minimum thickness of the base material: 8.250 in.



Coordinates Anchor [in.]

Anchor	x	y	c_{-x}	c_{+x}	c_{-y}	c_{+y}
1	0.000	-2.500	-	11.000	-	-
2	0.000	2.500	-	11.000	-	-

Company:	Weaver Construction Management, Inc.	Page:	10
Specifier:	Tyler Ammerman	Project:	Harold Thompson
Address:	14611 Lower Fountain Heights, Fountain, CO 80817	Sub-Project I Pos. No.:	Sheet A1 note "T"
Phone I Fax:	303-908-1229 | 719-382-7910	Date:	3/6/2012
E-Mail:	tammerman@weavercm.com		

8. Remarks; Your Cooperation Duties

- Any and all information and data contained in the Software concern solely the use of Hilti products and are based on the principles, formulas and security regulations in accordance with Hilti's technical directions and operating, mounting and assembly instructions, etc., that must be strictly complied with by the user. All figures contained therein are average figures, and therefore use-specific tests are to be conducted prior to using the relevant Hilti product. The results of the calculations carried out by means of the Software are based essentially on the data you put in. Therefore, you bear the sole responsibility for the absence of errors, the completeness and the relevance of the data to be put in by you. Moreover, you bear sole responsibility for having the results of the calculation checked and cleared by an expert, particularly with regard to compliance with applicable norms and permits, prior to using them for your specific facility. The Software serves only as an aid to interpret norms and permits without any guarantee as to the absence of errors, the correctness and the relevance of the results or suitability for a specific application.
- You must take all necessary and reasonable steps to prevent or limit damage caused by the Software. In particular, you must arrange for the regular backup of programs and data and, if applicable, carry out the updates of the Software offered by Hilti on a regular basis. If you do not use the AutoUpdate function of the Software, you must ensure that you are using the current and thus up-to-date version of the Software in each case by carrying out manual updates via the Hilti Website. Hilti will not be liable for consequences, such as the recovery of lost or damaged data or programs, arising from a culpable breach of duty by you.

ACCESSORY SCHEDULE		
MARK	QUAN	DESCRIPTION
A	3	3'-4" X 7'-4" WALKDOOR F.O.
B	1	5'-4" X 8'-4" WALKDOOR F.O.
C	1	1'-0" X 1'-0" LOUVER F.O.
D	4	14'-0" X 14'-0" HI-LIFT DOOR F.O.

SW-C

67'-11 1/4"

~~67'-11 1/2"~~ BL TO BL

21'-11 3/8"

~~25'-5 7/8"~~

~~22'-0"~~ 2'-11 5/8"

20'-6"

~~2'-0"~~ 10 3/8"

~~3'-4 1/8"~~

~~14'-0"~~ 14'-1/8"

~~2'-6 3/4"~~ 2'-5 3/4"

~~14'-0 1/8"~~

~~4'-0 1/8"~~

1'-3 1/8"

1'-2"

1'-2"

EW-B

~~51'-0 1/2"~~

~~51'-0"~~ BL TO BL

~~25'-6 3/8"~~

~~25'-6 1/8"~~

~~5'-4"~~

~~2'-8"~~

B

W V=10.3k Vup=7.0k Hx=3.8k Hy=5.4k

V V=20.3k Vup=13.8k Hx=7.1k Hy=3.8k

X V=5.8k Vup=7.0k Hx=3.8k Hy=3.8k

T Vup=6.0k Hx=5.4k

ELEV. = 5411.00

Hx=7.1k U

Y

Q

P

R

S

Z

25'-6"

51'-1 1/2"

EW-D

~~25'-6 3/8"~~

~~25'-6 1/8"~~

25'-5 7/8"

21'-11 3/8"

20'-6"

~~3'-10" 1/2~~ 3'-4"

9'-0"

11 1/2"

3'-3 1/2"

1 1/2"

~~13'-11 5/8"~~

~~2'-6~~

2'-6 3/4"

2'-5 3/4"

~~14'-0"~~ 14'-0" 1/8"

~~4'-0"~~ 4'-0" 1/8"

WCM as-built comments to Heath

ANCHOR ROD PLAN

FINISHED FLOOR ELEVATION = 5411.00

BASE OF ALL COLUMNS AT ELEVATION = 5412.00

BASE OF FRAME OPENING JAMBS AT ELEVATION = 5412.00

SW-A

Silent

REFERENCE NOTES:

1. ALL ANCHOR RODS INCLUDING NUTS AND WASHERS FOR SAME ARE NOT FURNISHED BY CHIEF BUILDINGS.
2. ANCHOR ROD MATERIAL SHALL CONFORM TO ASTM F1554 HAVING A YIELD OF 36 KSI OR GREATER.
3. ROD PROJECTIONS ARE RECOMMENDED MINIMUMS BASED ON THE BASE PLATE BEARING DIRECTLY ON THE CONCRETE PIER. IF THE BASE PLATE IS TO BEAR ON GROUT, THE ROD PROJECTION MUST BE INCREASED ACCORDINGLY.
4. CONCRETE SHALL HAVE A MINIMUM STRENGTH OF 3000 PSI.
5. ALL DRAWINGS ARE NOT TO SCALE.

ANCHOR RODS (BY OTHERS)		
QUAN	SIZE	PROJ
32	0-3/4" Ø	1 1/2"
40	0-3/4" Ø	2"
2	1" Ø	2"

REVISIONS

4

3

2

1

NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

Kell C. Kell

1-27-12

ANCHOR ROD DRAWINGS

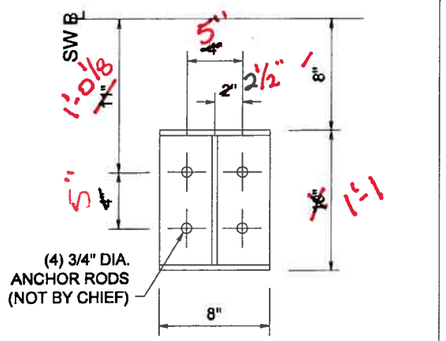
HEATH STEEL / WEAVER CONST. MANAGEMENT

FOUNTAIN, CO

RF 51'X68'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS a division of Chief Industries, Inc. P.O. BOX 2078 GRAND ISLAND, NE 68802-2078

DRAWN	CHECK	ORDER NO.	A1
BLO	JSA	B3004219	A4
26-JAN-12	27-JAN-12		



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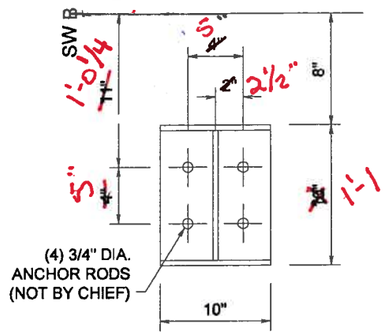

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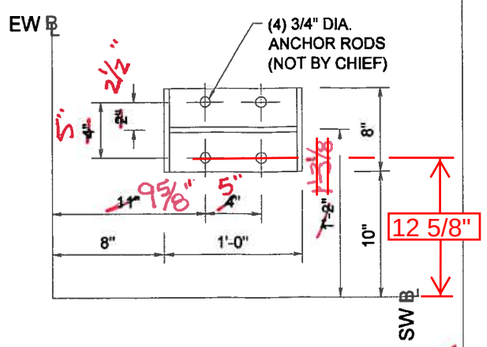

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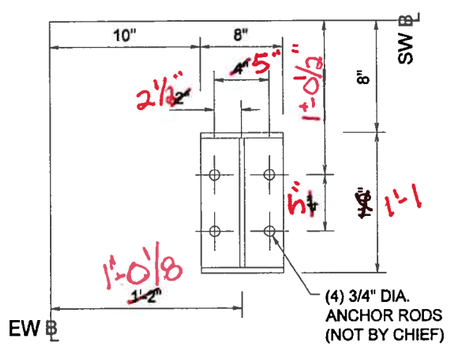

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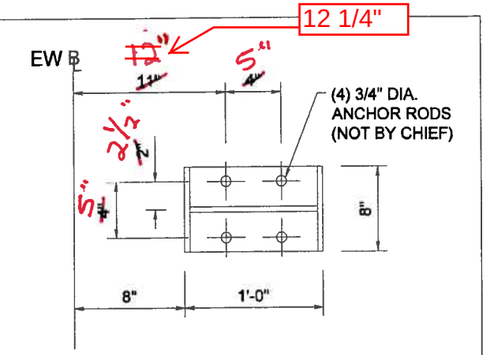
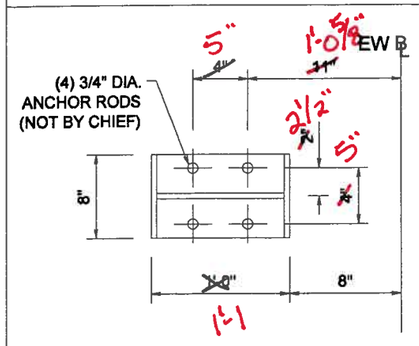


DETAIL V



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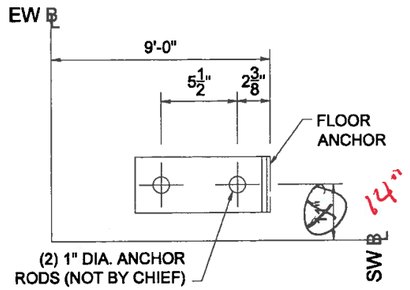

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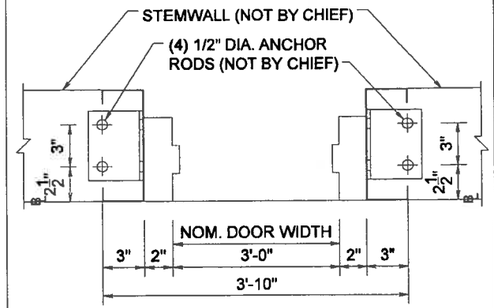
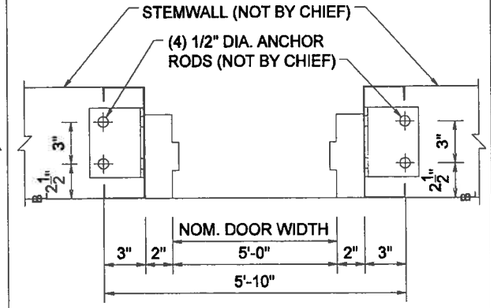
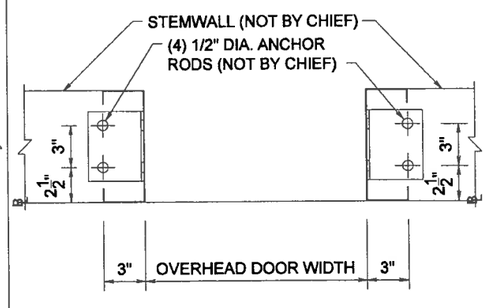


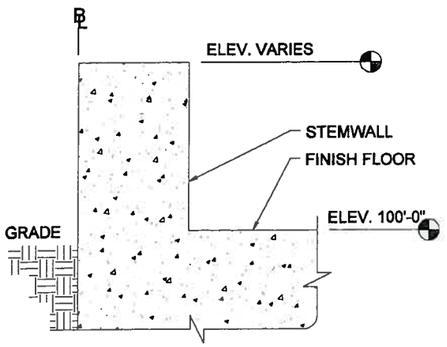
WALK DOOR ANCHOR ROD DETAIL



WALK DOOR ANCHOR ROD DETAIL



OVERHEAD DOOR
ANCHOR ROD DETAIL

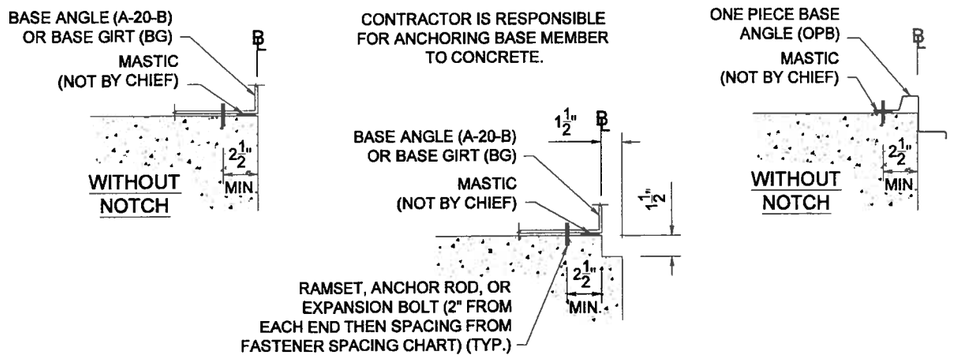


STEMWALL DETAIL

1. CHIEF BUILDINGS IS NOT RESPONSIBLE FOR CONCRETE AND/OR MASONRY DESIGN, DIMENSIONS & REINFORCING STEEL DETAILS. CHIEF BUILDINGS RECOMMENDS THE CONTRACTOR/BUILDER TO OBTAIN THE SERVICES OF A QUALIFIED DESIGN ENGINEER FOR DESIGNS & DRAWINGS OF MASONRY OR CONCRETE WALL, FLOORS, & FOUNDATIONS TO WITHSTAND THE COLUMN REACTIONS INDICATED ON THE A.B. PLAN. CONCRETE OR MASONRY WALLS SHALL ALSO BE DESIGNED TO WITHSTAND WIND/SEISMIC LOAD ON THE WALL & BASE OF BLDG. WALL PANEL.

2. WHEN ENDWALL POST & CORNER POST REACTIONS ARE NOT INDICATED, THE CONTRACTOR/BUILDER &/OR CONCRETE DESIGN ENGINEER SHALL DETERMINE THE REACTIONS FROM THE SPECIFIED LIVE LOADS, WIND/SEISMIC LOAD, AND ANY APPLICABLE AUXILIARY LOADS.

3. CONCRETE AND/OR MASONRY ELEV. INDICATED ARE PER THE AGREEMENT TO PURCHASE/CUSTOMER DRAWINGS RECEIVED FROM THE CONTRACTOR/BUILDER.



WITH NOTCH

BASE MEMBER DETAILS

BASE ANCHORAGE SPACING FOR STANDARD BASE ANGLE, BASE GIRT OR ONE PIECE BASE WITH CS OR AP WALLS		
FASTENER TYPE & DIAMETER	MINIMUM EMBEDMENT	MAXIMUM SPACING
1/4" WEDGE ANCHOR ①	1 1/4"	3'-0"
1/4" SCREW TYPE ANCHOR ②	1 1/2"	3'-0"
3/8" CAST-IN ANCHOR	4" WITH HOOK OR HEAD	3'-0"
1/4" HAMMER-IN ③	1 3/8"	2'-0"
0.14" POWDER ACTUATED ④	1 1/4"	1'-6"

① HILTI KWIK BOLT®, RAMSET TRUBOLT®, POWERS POWERSTUD®, OR EQUAL
② CFS TAPCON®, HILTI KWIK-CON II®, POWERS WEDGE-BOLT®, OR EQUAL
③ POWERS ZAMAC HAMMER SCREW®, HILTI METAL HIT ANCHOR®, OR EQUAL
④ POWERS BALLISTIC POINT PIN, RAMSET 1500/1600 SERIES, HILTI UNIVERSAL NAIL OR EQUAL

FASTENER SPACING CHART

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

Silvia

REVISIONS

4 —
3 —
2 —
1 —

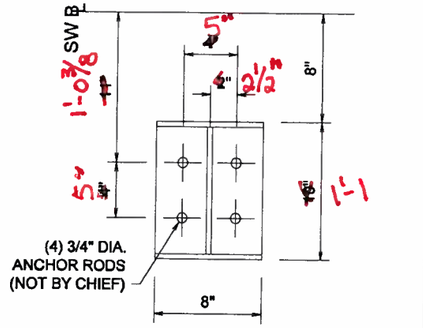
NOTWITHSTANDING THE ADJACENT SEAL, NEITHER THE ENGINEER NAMED NOR CHIEF BUILDINGS IS ACTING AS THE ENGINEER OF RECORD. THE ENGINEER NAMED AND CHIEF BUILDINGS RESPONSIBILITY IS LIMITED TO THE STRUCTURAL PERFORMANCE OF THE PRE-ENGINEERED COMPONENTS DESIGNED BY CHIEF BUILDINGS.

Kelli C. Reed
1-27-12

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078
GRAND ISLAND, NE
68802-2078

DRAWN	CHECK	ORDER NO.	A2
BLO	JSA	B3004219	A4
26-JAN-12	27-JAN-12		



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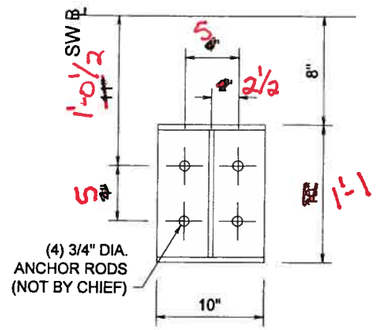

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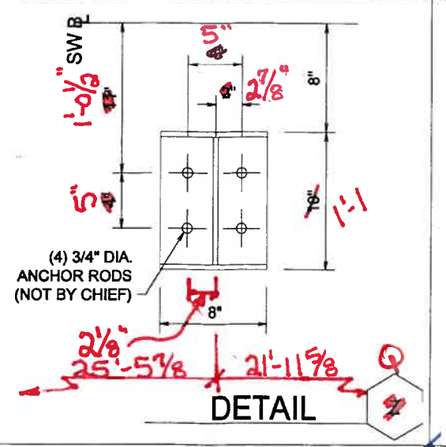

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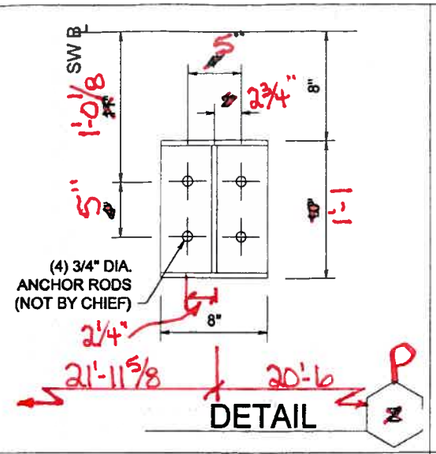

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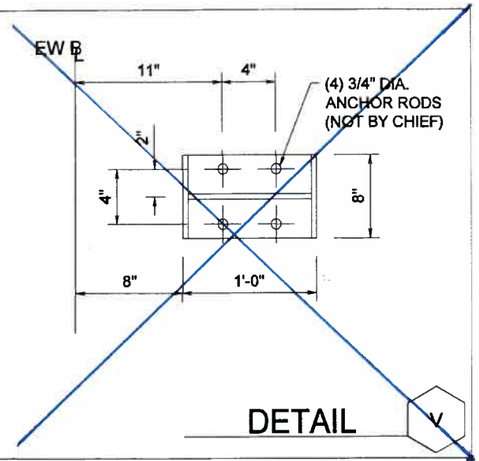

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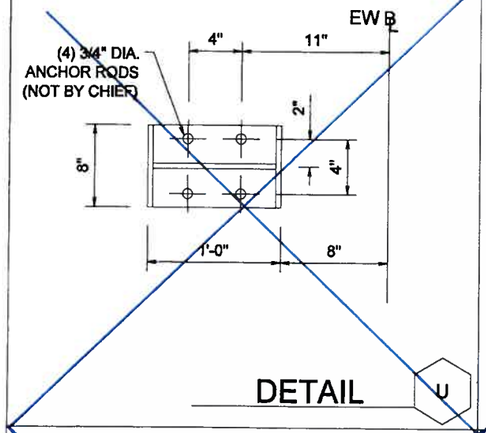

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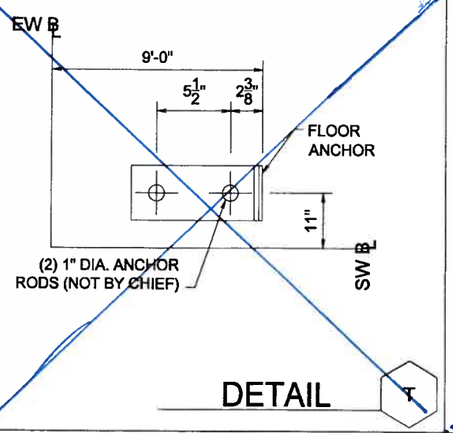

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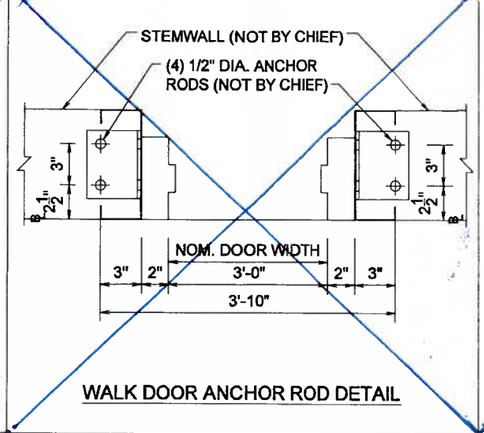
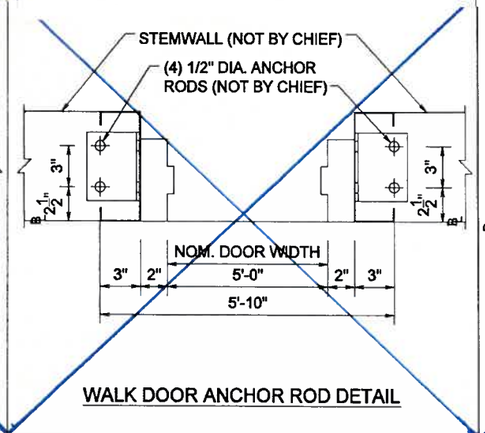
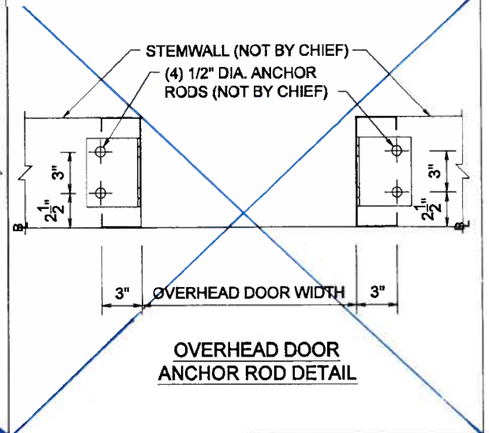


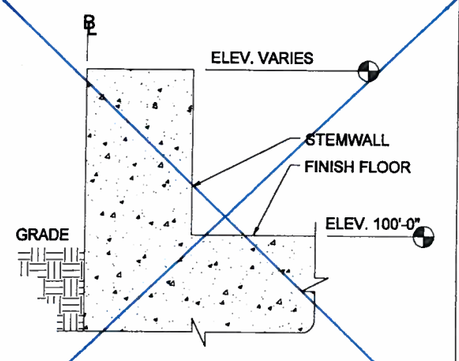
WALK DOOR ANCHOR ROD DETAIL



WALK DOOR ANCHOR ROD DETAIL



OVERHEAD DOOR ANCHOR ROD DETAIL



STEMWALL DETAIL

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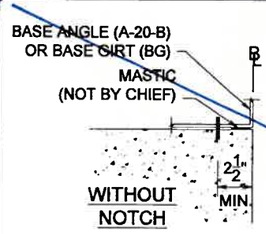
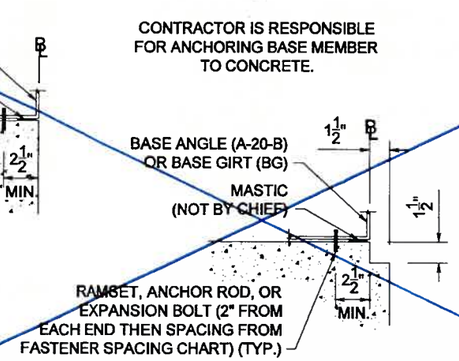
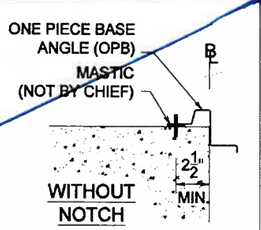




WITH NOTCH



BASE MEMBER DETAILS

BASE ANCHORAGE SPACING FOR STANDARD BASE ANGLE, BASE GIRT OR ONE PIECE BASE WITH CS OR AP WALLS

FASTENER TYPE & DIAMETER	MINIMUM EMBEDMENT	MAXIMUM SPACING
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④ POWERS BALLISTIC POINT PIN, RAMSET 1500/1600 SERIES, HILTI UNIVERSAL NAIL OR EQUAL

FASTENER SPACING CHART

REFERENCE NOTES

1. ACTUAL BASE PLATE DIMENSIONS MAY BE SMALLER THAN BASE PLATE DIMENSIONS SHOWN.

SIGN x _____

REVISIONS

4 _____
3 _____
2 _____
1 _____

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Kelli C. Reil
1-27-12

ANCHOR ROD DRAWINGS
HEATH STEEL / WEAVER CONST. MANAGEMENT
FOUNTAIN, CO
RF 51'X68'X19'-4" BAYS VARY 3:12

CHIEF BUILDINGS
a division of Chief Industries, Inc.
P.O. BOX 2078 GRAND ISLAND, NE 68802-2078

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26-JAN-12	27-JAN-12		